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# THE IRON AGE

Published Weekly  
Vol. 118, No. 5

NEW YORK, N. Y., JULY 29, 1926

Entered as second-class matter June 18, 1879, at Post Office  
at New York under the Act of March 3, 1879

Single Copy, 25 Cents  
Six Dollars a Year in U. S.  
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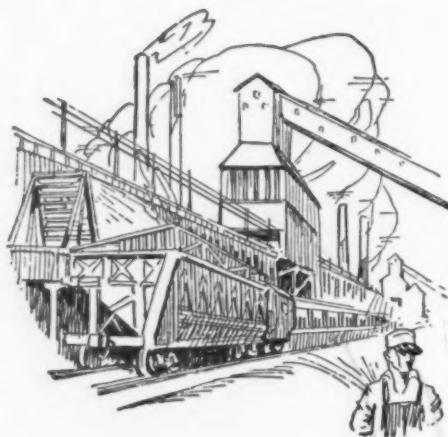
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# THE IRON AGE

New York, July 29, 1926

ESTABLISHED 1855

VOL. 118, No. 5

## The Steel Shovel—How It Is Made



Features of the Mine and Works Shovel—  
Types Reduced by Standardization  
—Larger Use of Steel Handles  
—Proper Way to Shovel



BY M. W. VON BERNEWITZ\*

**A**FTER July 1, 1926, mining companies, metallurgical works, railroads and the various other consumers of shovels were confronted with the fact that there was one less standard grade of shovel and considerably fewer possible sizes from which to select. In other words, instead of four standard grades of high-carbon shovels, spades and scoops, the manufacturers now produce only three standard grades. They thus eliminate about 43 per cent of the sizes which are considered unnecessary. These eliminations represent only about 7.50 per cent of the total volume of annual sales in shovels, spades and scoops. The annual output of shovels of all kinds is approximately 9,600,000 pieces.

This action is the result of various meetings between the shovel manufacturers and representatives of various large companies, all in conjunction with the Department of Commerce.

It was originally intended to eliminate all special finishes such as polished, half-polished, etc., but, in the final analysis, this feature was not approved because these special finishes were so closely identified with the merchandizing of the line. It is recognized that special finishes represent almost entirely a merchandizing value, and that black shovels are considered more effective and efficient than polished shovels because the polishing of a shovel necessarily wears away the outer surface of the shovel blade, reduces the gage and, consequently, the wearing qualities of the steel; also, in the case of the standard plain back or Antrim weld shovel, it results in grinding out and to some extent weakening the weld. It is expected that eventually the consuming trade in general will be educated to the idea of black shovels only.

### Steel Handles Replacing Wooden

Three standard grades of shovels were determined upon for the reason that there are but three standard grades of handles—the double X, single X, and No. 1, and, the quality of handles contributes largely to the quality of the shovel. Incidentally, the orthodox type of wood D handle is being gradually replaced by various types of pressed-steel handles used in connection with wooden stems. The manufacture of the common wood

D handle involves a considerable waste in ash timber, and the use of a pressed-steel handle, in connection with a straight stem, results not only in the conservation of our rapidly diminishing supply of ash timber, but likewise is a better and stronger handle.

In general practice it is possible to produce five suitable stems from the same quantity of timber that will produce two wooden D handles, so that the selection is in the ratio of 2½ to 1. Almost any of the better makes of pressed-steel grips prove stronger in actual test than the orthodox wooden D handle. The eventual universal adoption of a substitute D is purely a matter of education in the trade.

At the plant of Hubbard & Co., Pittsburgh, which the writer recently visited, and which has since been destroyed by fire, there has been developed what is called an indestructible pressed-steel D handle. It is produced from 12-gage extra high-carbon steel formed hot and, under actual test, develops more strength than is ever required of a shovel handle. The main features of this handle are that it is made hot from high-carbon steel, is reinforced by a corrugation running reversely through the side of the handle, and the cup formation which holds the wood grip itself is partly pierced by three indentations which grip into the fiber of the wooden handle-hole, preventing it from ever turning in a man's hand when being used. It is a substantial, well-made grip and extremely strong. The illustration shows the pressed-steel handle with wood grip and the common all-wood handle.

Another feature is that the hand-hole in the steel handle is ⅝ in. wider than that of the all-wood handle. The grip has already been adopted by a great many of the leading railroads and industrial companies of the country. About 20 per cent of Hubbard & Co.'s output is now fitted with this handle, whose popularity can be estimated when it is stated that a year ago none of them were in use.

### Manufacture of Shovels

The Hubbard plant had a daily capacity of 500 dozen shovels, spades and scoops, or 6000 pieces. It employed about 175 men and girls, of whom about 75 per cent were on a piece-work basis. About 80 types of

\*Bureau of Mines, Pittsburgh.



shovels were made in a total of 350 or more sizes and four standard grades. Hubbard & Co. operate three subsidiary plants at Alton, Ill.; Montpelier, Ind., and Aliquippa, near Pittsburgh.

#### Making the Ore and Works Shovel

The raw materials, from which shovels are produced, come in the form of sheets, gages 12, or 0.109, to 16, or 0.062, inclusive. The sheets from which the blades are produced are all high-carbon ranging from 0.70 to 0.90 per cent. The straps, which are welded to the blade in the construction of the so-called plain-back shovels, are dead-soft steel. The company also uses a large quantity of chrome-molybdenum steel for the manufacture of its heat-treated or special-grade shovel.

The ordinary plain-back shovel goes through approximately 55 operations and the hollow-back type, or coal shovel design, about 24 operations. The first grade of the four standard grades is made from high-carbon, genuine crucible steel, whereas the three lower grades, or, second, third, and fourth, are made from high-carbon, open-hearth steel.

**Heating the Blanks:** The heating furnaces use 30 to 40 gravity oil in a high-pressure system, usually operated under 30-lb. pressure; at times natural gas is used, the furnaces being equipped for both types of fuel. Depending upon the type to be made, the blanks are heated from two to five times. The two standard types of shovels might commonly be described as the ordinary dirt shovel, or welded-type shovel, and the ore or coal shovel, or hollow-back type of shovel. The major operations in the manufacture of the first type are as follows:

**Forming the Blade:** Sheets and straps are blanked to correct size; the back strap and front strap are welded to the shovel blade, after which the blade is correctly sheared or headed, depending on the type of shovel required, square point or round point. The shovels are then shaped to give correct radius to the blade and the straps are formed and curved so as to fit the handle and take the correct radius or bend. The shovel then goes through the various finishing operations. The ordinary shovel of the above type consists of three parts, the high-carbon blade, the dead-soft back strap, and the dead-soft front strap. The hollow-back type differs in that it is in one piece, all blanked from high-carbon steel. The socket into which the handle fits is an integral part of the blade itself.

**Fitting the Handle:** As the next step consists in fitting the handle in the strap or socket of the blade, it might be stated that the thin or bottom ends of the short wooden D handle and the plain long handle are placed in a tank of hot water (about 100 lb. pressure of steam) to a depth of 4½ in. After one hour they are taken out, placed in a machine and bent to the shape desired. The bent end is allowed to cool in a die, thus insuring that the shape is maintained. Holes are drilled in the lower part of the handle for the strap rivets, also drilled at the top for the D-handle rivets, which are now put in.

Where the blades and handles are assembled, the latter are driven into the straps or sockets, riveted, and the latter are squeezed close to the handles by rolls.

**Polishing the Shovel:** As the straps are naturally rough, they are made smooth on a series of polishing wheels. If the blades are to be polished, they are ground by means of felt wheels coated with 30, 60, and 90-mesh alundum. Handles are made smooth by a series of sand belts, 60 and 90-mesh, and finally on a wax belt.

In the entire sequence of operation no one man, excepting the last, produces a finished shovel. This is then labeled according to grade and style. All of the men are adept at their work and there is no time wasted. The life of a hollow-back ore shovel is about 60 days. When worn down 2 in. it pays to get a new one.

#### Making the Coal Shovel

The coal miner uses a hollow-back shovel with 26-in. handle or a broad-point shovel with deep set sides, either plain or corrugated blade with D handle or normal length. The steel in the coal shovel is lighter than that for the ore shovel and, as stated before, the shovel

passes through less than half as many operations as the latter.

After being sheared, the blades are stamped and shaped. The strap is pressed out during the shaping. From this point on the coal shovel is handled as the ore shovel, only that none is polished. The life of a coal shovel blade is said to be about 45 days, during which period it will handle a maximum of 450 tons.

#### Studies of Shoveling

A number of studies of shoveling (the writer objects to the term "mucking," commonly used in many Western districts) have been made, and brief reference to the findings should be of interest.

F. W. Taylor<sup>1</sup> said that the average man would question whether there is much of any science in the work of shoveling, yet this science is so elementary as to be almost self-evident. For a first-class shoveler there is a given shovel load at which he will do his best day's work. He will do this when his average for the day is about 21 lb. Shovels should be appropriate to handling a given type of material—a small shovel for iron ore and a large one for ashes. A man shoveling ore with a load of 30 lb. per shovel, and then handling rice coal, with a load on the same shovel of less than 4 lb., is not doing good work.

G. T. Harley,<sup>2</sup> efficiency engineer for the Phelps Dodge Corporation, at the Burro Mountain copper mine, Tyrone, New Mexico, said that stoping methods in which shoveling plays an important part are gradually being replaced by other and cheaper methods. But there will always be considerable shoveling done underground in stopes as well as in drifts, tunnels, winzes, and shafts. As it was considered that the shovelers at this mine were not producing the tonnage which they should, Mr. Harley undertook to determine how the general efficiency of the underground shoveling could be improved. As a result of the study, it was proved that the design of the shovel has a marked effect on the shoveling efficiency and, with the proper weight and size of tool, a man's efficiency will be increased in spite of himself. A shovel weighing 5½ lb. made of the best steel gives excellent service. The designs best adapted to mining work at Burro Mountain are long- and short-handle shovels, with square blade 10¼ by 13 in. and round-point blade 11½ by 13½ in., with handles 22½ and 34 in. in length. The blade, of No. 15 gage steel, should hold 21 lb. of ore and have a life of not less than 1100 tons of medium hard ore when shoveled off a wooden mat or collar.

#### Hints to Shovelers

D. J. Hauer<sup>3</sup>, efficiency engineer of Baltimore, in his "A Hundred Hints for Shovelers," described and showed the style, size, and weight of shovels best suited to various tasks, and how to shovel. He said that there is skill in choosing and using shovels; proper choice and use will increase the efficiency of shovelers by a large percentage. In selecting shovels, Mr. Hauer says that the grip on D-handle shovels should not be so large that a man's hand cannot go around it, otherwise it will tire him. For heavy work it is best to select a crucible steel shovel; for lighter work, an open-hearth shovel; and for coal, a light shovel with solid socket or hollow-back.

Some attention should be paid to the lift, as the ease with which a man shovels, especially with a short-handle shovel, depends upon the lift. In ordering shovels it is well to state what material is to be handled, because the style has much to do with the efficiency of shoveling. The economical load for a shoveler is 21 lb., the average load for the average man; therefore, in order to obtain this load, it is evident that different sized shovels should be used for different materials, and the bowls must be shaped and sized to suit each class of material. Men should not be expected to do good work with poor, cheap, or worn-out shovels; nor should they use them as hammers or crowbars; and, as a safety hint, a shovel should not be employed to open boxes of explosives.

<sup>1</sup> The Principles of Scientific Management, 1911. p. 64.

<sup>2</sup> Trans. Amer. Inst. Min. Eng., vol. 61, 1918, pp. 147-187.

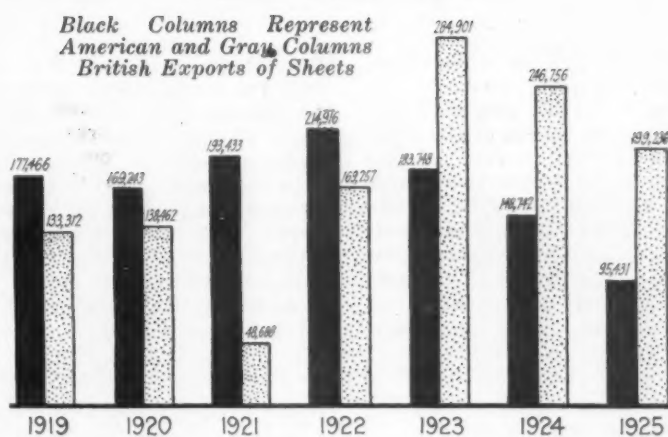
<sup>3</sup> The Contractor, March 29, 1918, pp. 135-139.



# United States Exports of Black Sheets

Year	To Japan, Gross Tons	Total, Gross Tons
1913....	1,236	132,919
1914....	.....	.....
1915....	.....	.....
1916....	.....	.....
1917....	.....	.....
1918....	53,858	163,420
1919....	38,118	177,466
1920....	53,723	169,243
1921....	127,626	193,433
1922....	159,092	214,916
1923....	74,757	183,748
1924....	101,606	148,742
1925....	38,234	95,431

Black Columns Represent American and Gray Columns British Exports of Sheets



# United Kingdom Exports of Black Sheets

Year	To Japan, Gross Tons	Total, Gross Tons
1913....	6,863	68,152
1914....	.....	53,927
1915....	.....	.....
1916....	.....	.....
1917....	.....	.....
1918....	.....	115,397
1919....	.....	133,312
1920....	30,855	138,462
1921....	16,089	48,688
1922....	56,371	169,257
1923....	172,927	284,901
1924....	159,099	246,756
1925....	87,435	199,236

## Japan Develops Sheet Industry

Prospective Doubling of Capacity and Recent Continental Competition May Decrease American and British Sales

BY GEORGE S. HERRICK

IN recent years, particularly since the Armistice, Japanese consumers have been heavy buyers of light gage black sheets. While consumers in the United States seldom use thinner than No. 28 gage, Japanese merchants and the extensive galvanizing industry that has been established in the past few years have been large consumers of Nos. 30 and 31 gage black sheets, which are generally rolled on a tin mill.

Specifications for these sheets may be roughly divided into two classes: sizes and gages used by the galvanizing plants for corrugated sheets and the size used for the plain galvanized product, which is also sold in small lots from warehouse stocks. For corrugating, the sheets are only 30 in. wide, but are 72 in., 84 in. or 96 in. long. These are generally purchased by the bundle of 224 lb., the 30 x 72-in. size being specified as 33 and occasionally 28 sheets to the bundle; the 30 x 84-in., 28 and sometimes 25 to the bundle, and the 30 x 96-in., 25 and occasionally 17 to the bundle, the number of sheets governing the gage.

For use as plain, box-annealed black sheets, or plain galvanized sheets, purchases are confined to 36 x 72 in., with 13 sheets to the bundle of 107 lb. Of the large total consumed in Japan, it is conservatively estimated that the galvanizing plants take close to 90 per cent, most of the remaining sheets being retailed out of merchants' stocks by the sheet.

### American Sheets of High Quality

In the immediate post-war years the American product enjoyed the distinction of being considered by the Japanese purchasers as the highest quality and to a certain extent this reputation for quality stands today, Eagle brand, the product of the United States Steel Products Co., as a rule selling in the Japanese domestic market at slight advances in price over competing brands. In the past few years, however, British mills, until quite recently the only competitors for this business of mills in the United States, have established a reputation for several British brands that are today considered on a par with most of the American product.

The galvanizing industry, which has grown rapidly during the past few years, aided in no small measure by an almost prohibitive tariff on galvanized sheets, is by far the largest sheet consumer. Under the new tariff schedule, effective March 29 of this year, galvanized sheets are dutiable at 2.85 yen per 100 kin, or, at the present rate of exchange, about \$22.50 per gross ton. Black sheets until the present tariff, which is extending considerably greater protection than former tariffs to the growing sheet industry of Japan, have been dutiable for only a small amount. The present schedule imposes a duty of 0.30 to 1.10 yen per

100 kin, or from about \$2.35 to \$8.70 per gross ton, depending upon the thickness of the sheets.

### Large Number of Galvanizing Plants

There are 35 or more galvanizing plants in Japan; 10 or more in the Tokio district operating a total of 26 pans; 7 or more in the Osaka district with 21 pans, and 2 in the Yokohama district with 4 pans. Among the principal factories in Japan are the following:

Tokio District	Osaka District
Tokio Galvanizing Co.	Nippon Aento
Osaka Teppan (Tokio plant)	Osaka Teppan
Jyoto Galvanizing Co.	Dog Hira-nami
Kashiwa-Shokai	Hinode Aento
Nakayama-Noboru	E. Nakayama Shoten
Nakayama-Shigetaka	Amagasaki-Kogyojo
Toa Galvanizing Co.	Inul Tessen
Taisho Teppan Co.	
Nattori Galvanizing Factory	
Tokio Totan	

The monthly capacity of these plants in both districts is about 24,000 tons, but at this writing only about 50 per cent of the total number of pans are in operation. Even this rate is evidently considered too high, for limitation of the monthly production is being discussed as a result of the depressed market conditions, and as low as 30 per cent operation is considered in some quarters as sufficient. This would be about 8000 tons of sheets a month. It is suggested that to obtain this curtailment all plants should discontinue operations for about 10 days of every month.

The products of the various galvanizing plants are in almost all instances marked with brand designations such as Red Pigeon, Swallows, Sparrows, Butterflies, Pheasant, Mandarin Duck, Crane, Dharma, Eagle with flag, Elephant, Horse, Lobster, Porgy, Swan, Plover, Dog, Green Tiger, Ship, Concentric circles and numerous other insignia.

Until recently either British or American black sheets were used in the production of these galvanized sheets, the Japanese industry buying increasing tonnages each year, as the industry developed and expanded. In 1920 the combined exports of black sheets to Japan from the United States and the United Kingdom totaled 84,578 gross tons; in 1921, 143,715 tons; in 1922, 215,463 tons; in 1923, 247,684 tons, and in 1924, 260,705 tons. It is noteworthy, as the accompanying chart shows, that, while there was a steady increase in the total consumption of black sheets over this period, the exports of the United States declined as the British exports increased, and those of Britain declined when American shipments became greater. The exports of 1924 possibly marked the high point in the combined sheet exports of the two countries, for 1925 shows a total of only 125,669 tons, and with developments in the Japanese sheet producing industry,

and the recent appearance of Continental competition, the high total of 1924 may not again be equaled.

Both the galvanizing plants and the merchant buyers of sheets generally buy certain brands or the product of certain mills which rank high in their estimation. In the case of purchases of sheets from mills in the United States there will sometimes be preference for the product of the United States Steel Products Co., or the Bethlehem Steel Co., the Youngstown Sheet & Tube Co., or the Wheeling Steel Co. Numerous British mills are reported among the sellers to Japan, and practically all their products are brand

#### Analyses of German, British and Japanese Sheets

(Results of Tests in Japan)

Maker, Location	C.	Mn.	Phos.	S.	Si.	Cu.
Gelsenkirchen Bergwerks A. G., Germany.....	0.08	0.40	0.04	0.04	...	...
*W. Gilbertson & Co., England .....	0.09	0.42	0.18	0.09	...	...
Imperial Steel Works, Yawata, Japan .....	0.10	0.40	0.04	0.04	0.14	0.35
Kawasakal Dockyard Co., Kobe, Japan .....	0.08	0.34	0.51	0.28	0.13	0.12
Osaka Sheet & Plate Mfg. Co. (Tokuyama factory) ..	0.10	0.35	0.60	0.31	0.85	0.14
	0.08	0.40	0.45	0.03	0.01	...
	0.14	0.42	0.60	0.04	trace	...

\*Comet brand.

marked. An accompanying list includes the most popular British brands and the names of the manufacturers or distributors.

#### Rolling Capacity Stimulated in Japan

The increasing demand from the Japanese galvanizing industry and other users in Japan has stimulated the development of a domestic rolling capacity, which is beginning to assume sizable proportions. For some time the Imperial Steel Works, Kiushiu, has been rolling light gage black sheets, but its capacity for this product is only about 10,000 tons a year. The Osaka Sheet & Plate Mfg. Co. operates a sheet mill at Tokuyama with a capacity of close to 10,000 tons, but the lightest gage that has been profitably produced is No. 28, so that it is not a serious competitor for the thin gage sheet business of the Japanese market.

About a year ago, however, the Kawasaki Dockyard Co., at Kobe, began to increase its small sheet capacity by the purchase of rolling mill equipment in the United States, placing orders with such makers as Mackintosh, Hemphill & Co., Pittsburgh, and the National Roll & Foundry Co., Avonmore, Pa. Today the Kawasaki dockyard claims an annual capacity of about 35,000 tons of thin gage sheets and, with the completion of present installations some time in July, the total output of this one company, it is claimed, will be close to 95,000 tons a year. Thus far the Japanese industry faces one rather serious obstacle, the high cost of production.

#### Belgian and German Sheets Tested

In the meantime, although the Japanese have been developing a domestic sheet industry, there has been considerable activity in seeking new sources of supply abroad, and tests have been made on sheets of foreign manufacture other than American or British. Several months ago a trial shipment of Belgian-made open-hearth light gage black sheets was tested in Japan. The product was apparently found satisfactory, but

these sheets were only 30 x 72 in., the smallest size used for corrugating. A few months ago, however, the Gelsenkirchen Bergwerks A. G., Düsseldorf, Germany, shipped a trial tonnage of open-hearth steel sheets, made to Japanese specifications (36 x 72 in., 13 to the bundle of 107 lb.), and upon tests they were reported comparable in quality to the best British brands. The accompanying table shows the chemical analysis made of the Gelsenkirchen sheets compared with the British-made Comet brand and the products of the Imperial Steel Works, Kawasaki Dockyard Co., and Tokuyama factory.

#### Finishing Mills Being Developed

As a modern industrial nation, Japan has made tremendous strides during the past 15 to 20 years. The development of a sheet rolling industry is only a small part of the ambitious program being carried out in the Japanese steel industry. During the past few years wire-drawing plants have been growing in number and size, so that Japan has become a heavy buyer of wire rods in the world market and a smaller consumer of foreign wire and wire products.

#### British Brands of Black Sheets Sold in Japan

Brand	Maker
Comet	W. Gilbertson & Co., Ltd., Pontardawe, Glamorgan, Wales
Raven	Grovesend Steel & Tinplate Co., Ltd., Gorseinen, Glamorgan, Wales
Koto	Upper Forest & Worcester Steel & Tinplate Works, Ltd., Morriston, Glamorgan, Wales
Morestead Special	
Eclipse }	Frederick Braby & Co., Ltd., London
Flexum }	Baldwins, Ltd., London
Phoenix }	Ebbw Vale Steel, Iron & Coal Co., Ltd., Ebbw Vale, Monmouthshire
E. V. }	Partridge, Jones & John Paton, Ltd., Newport, Mon.
Fan }	H. B. Barnard & Sons, London
Dolphin }	Arthur Jones & Co. (merchants), London
Harvest }	
A. J. Co. }	
Sunflower	Burnell & Co., Ltd., Ellesmere Port, near Birkenhead
Samson	Melyn Tinplate Co., Ltd., Neath, Glamorgan
Staley Crown	John Summers & Sons, Ltd., Stalybridge
Marksmen or }	Bowesfield Steel Co., Ltd., Stockton-on-Tees
William Tell }	
R. P. D. }	Dorman, Long & Co., Ltd., Middlesbrough, England
D. L. }	John Lysaght, Ltd., Bristol
Globe }	Brunner, Mond & Co., Winnington, Northwich, exporters
Dobbin }	Wellfield Galvanizing Co., Ltd., Llanelly
Stag	Richard Thomas & Co., Swansea
Lily	Miller, Gibb & Co., Liverpool, exporters
Lily Crown	

A few months ago it was authoritatively stated that the Imperial Steel Works would soon be in a position to supply the rail requirements of Japanese railroads for sections up to 80 lb. and part of the requirements for 90 lb. and heavier. On April 10 the Steel Manufacturing Encouragement Act, providing for a subsidy on molten iron produced from ore for immediate steel production, was made effective. In addition, the act exempts such producers for a period of 15 years from business profit taxes and import duties on equipment. A drastic duty on copper is developing the native copper mining industry.

Gradually, from a large importer of finished products, Japan is apparently slowly working into the position of an importer of semi-finished and raw products for conversion in its own finishing mills.

#### Lake Superior Mining Institute Will Go to Milwaukee

The twenty-fifth annual meeting of the Lake Superior Mining Institute will be held on the Gogebic iron range Wednesday, Sept. 8, with headquarters at Ironwood, Mich., and the day will be spent in visiting the mines. A business session will be held in the evening, at which papers will be presented. After the meeting the party will take train for Milwaukee, arriving Thurs-

day morning, Sept. 9. Visits will be made to the plants of the Allis-Chalmers Mfg. Co., the Bucyrus Co., the Cutler-Hammer Co., A. O. Smith, Worden-Allen Co. and others. The closing meeting will be held at Milwaukee in the evening, after which the members will be free to return home as they may desire. E. W. Hopkins, Ironwood, is president of the institute, and A. J. Yungbluth, Ishpeming, Mich., is secretary. To his capable handling of the affairs of the institute for more than 25 years much of its success is due.





President Grace (at Right) Awarding Prize to Boy Scout Participant in Children's First-Aid Contest at Bethlehem Meet



School Girls (at Left), Trained in Safety by the Bethlehem Steel Corporation, Work Out First-Aid Problem at Annual Meet

# Making Accident Prevention Popular

Employees of Bethlehem Steel Corporation Compete at First-Aid Meet for Cash Prizes

FIRST-AID and mine rescue teams made up of more than 200 employees from all units of the Bethlehem Steel Corporation's steel plants and mines competed in the annual First-Aid Meet at Bethlehem, Pa., on June 26. To stimulate employee interest in first-aid and accident prevention work, the corporation awarded almost \$4,000 in cash prizes to the winners of the preliminary and final meets. In addition, silver trophies are awarded to the winning steel plant and mine teams for the best work in their respective fields. The trophies are held for one year and until the next annual meet.

These annual first-aid meets represent the final step in the graduation of 1200 employees trained in safety work each year at the steel plants and mines of the corporation. More than 7000 Bethlehem workers have now been trained in first-aid methods and, in addition, similar instruction has been given also to several thousand boys and girls in the districts where the corporation maintains operating units.

In a message to the participants in the meet, President Eugene G. Grace said:

Bethlehem Steel Corporation endeavors to make working conditions safe in its plants. Through scientific study most accidents formerly accepted as inevitable are now prevented. By even greater thoughtfulness and caution on the part of all employees such accidents as now occur can be largely eliminated. Thus, accident prevention in Bethlehem plants becomes a matter of vigilance and education.

In addition to bringing about proficiency in the care of injured workers, first-aid instruction helps maintain the interest of all employees in safe working practices.

## Teams Show High Average of Skill

The Johnstown Cambria plant team won first place, with an almost perfect average of 99.5 in the working of four first-aid problems that furnished the basis of the competition. This victory was won by the narrow margin of half a point over the Bethlehem plant team, which scored 99 per cent. The Lebanon and Coatesville teams were a close third and fourth, respectively.

The contests were held in the open on Lehigh Field, like an athletic meet. Teams were ranged in a circle in the center of the field and judges watched closely the working out of each problem. The problems ranged from simple administration of first aid, in a case of minor injury, to treatment of compound fractures and rescue and resuscitation of imprisoned mine workers.

## Typical Field Problems

A typical first aid problem given to the mines division at the meet was described to the competing teams as follows:

A man is found in a mine on his back, unconscious, his lips and ear lobes are blue, no indication of pulse or breathing and his pupils are dilated. The miner's left arm is rigid at the shoulder; the elbow stands off at a distance of 2 in. from his body; the shoulder appears flat and swollen and there is a marked depression beneath the point of the shoulder; the head of the bone under the arm pit is found in an abnormal position. The ends of bone can be seen on right leg 4 in. below knee; the right leg is shorter than the left and out of line from normal position. Treat.

The teams were allowed 2 min. to read the problem and 10 min. to work it out.

Another problem, for which the working time was 5 min., involved demonstration of three methods of rescuing a man found unconscious and his body in contact with a live electric wire. After rescuing, the team was called upon to treat the "patient" for burns and shock and to demonstrate artificial respiration for 2 min.

Apart from the first-aid work, other problems involved temporarily sealing off a fire in the main drift of a mine, reinforcing a loose and dangerous roof and overcoming the various obstacles that confront rescuers in a mine disaster.

## Gallery Made to Simulate Mine

For the purpose of conducting the mine rescue contest, a wooden gallery 144 ft. in length was constructed on the field, to represent the interior of a mine. As the teams worked out their problems, formaldehyde fumes



Mine Rescue Team Member Dons Gas Mask and Prepares to Enter Poisoned Atmosphere of "Mine Gallery" on the Field at Bethlehem's Annual First-Aid Meet



were generated inside the gallery, to bring about the condition of gas or after-damp which usually develops in a mine disaster. The work of the various teams could be observed by the judges through windows placed around the side of the gallery.

All team members in this contest had had experience in mine exploration and rescue work at a number of mine explosions and fires during the past two years, both in Pennsylvania and West Virginia. Apparatus used by the teams was that approved by the United States Bureau of Mines for mine rescue work and fire fighting and for use in any irrespirable atmosphere.

#### Course in First Aid

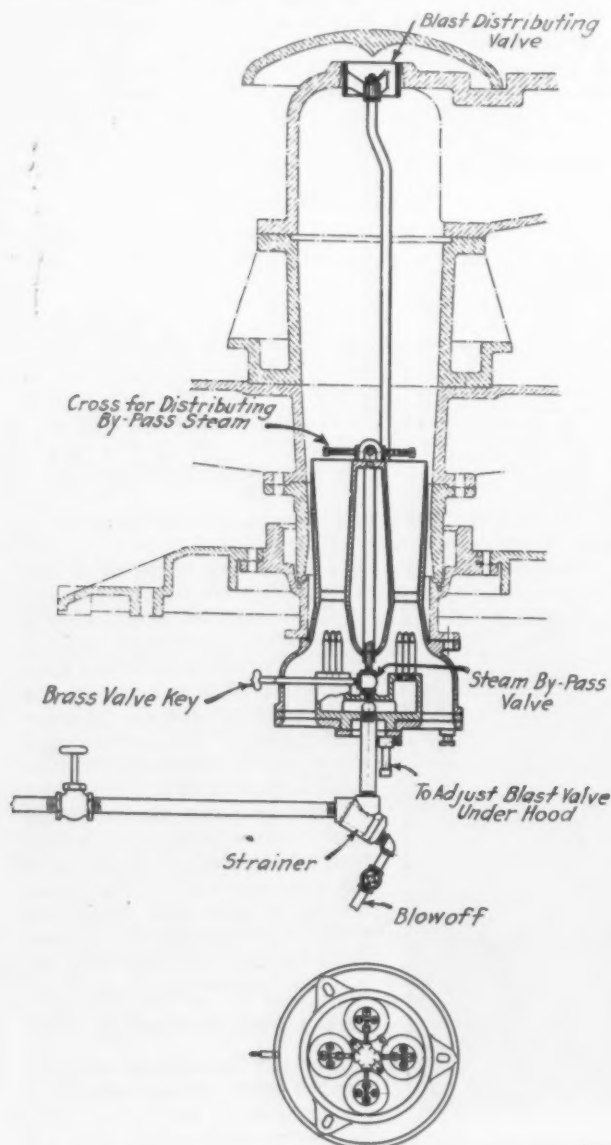
The first-aid meet is a valuable means of stimulating employee enthusiasm for safety work. However, the meet must have a substantial background of previous educational activity. The first-aid course which Bethlehem gives each year to hundreds of its employees covers a period of four months and consists of two hours of training per week on the company's time. One hour is spent with a regular instructor and the

other is used for rehearsal under the supervision of an experienced fellow employee—a permanent safety committeeman who has previously taken the course. Each shop has one of these committeemen designated to keep a watchful eye upon his fellow workers and to spread among them the gospel of accident prevention. As the committeeman is one of the "boys," he can appeal to the men from their own point of view.

The Bethlehem employee's safety education is two-fold, consisting of first aid and accident prevention instruction. He is trained to rescue men from danger, to give artificial respiration, treat shock, apply tourniquets, bind up wounds and splint broken bones. Instruction is based on literature circulated by the Federal Bureau of Mines and other first aid authorities. Before bandage and splint work is taught, a simplified but thorough course in anatomy and physiology is given. Through the medium of pictures, charts and the human subject, the instruction is made as practical as possible. Simple names take the place of medical terms and a sharp line is drawn between real first aid and the doctor's work.

### Blower for Producer-Gas Machines

The Morgan Construction Co., Worcester, Mass., developed and put into service, under the supervision of the late Charles W. Lummis, a new type of blower specially adapted to the work of injecting the proper proportion of air and steam into gas producers, without the usual roaring noise and without moving parts.



Morgan Blower for Producer-Gas Machines Has No Moving Parts and Is Termed Noiseless

The blower is based on a new principle discovered during experimentation, namely that when steam is discharged through a number of very small orifices directly into a Venturi tube, without the use of gathering cones, these small streams propel twice the volume of air which can be propelled by the same amount of steam against the highest resistance in a gas producer by means of a single steam jet blower of the Koerting type, and does this efficient work in comparative silence.

Normally this new type is found not to use sufficient steam to inject the air required to make good gas. The remainder of the steam is supplied through a bypass pipe to a cross at the top of the blower, as indicated in the accompanying drawing. This bypass is controlled by a brass key shown on the left of the cut, which is made separate, to be held by the gas foreman and thus to prevent irresponsible tampering with the adjustment. By these means, it is emphasized, the minimum quantity of steam is used because the amount is not governed by the needs of the blower. Steam equal to 20 per cent of the weight of coal is found sufficient to gasify high grade coals, although this ratio increases with the fusibility of the ash.

The blower is specially designed for use with the Morgan producer-gas machine and means are incorporated with it for controlling the amount of blast which can be discharged at the center of the fire, consisting of a valve under the hood at the top of blast arms. When this valve is closed all the air is compelled to pass through the hollow arms of the producer-gas machine into the large blast ring which supports the brick lining, but if the fire tends to run cool in the center a small opening of the valve serves to correct that tendency. It is locked permanently in position once the proper adjustment is made to suit the coal. The air inlet plate is also permanently locked in the full open position, needing no adjustment. It is provided only to prevent ingress of air when the producer is shut down.

The maximum capacity of the producer-gas machine is ordinarily reached with a steam pressure of 30 to 40 lb. per sq. in. The blower is now supplied as standard equipment on the Morgan producer-gas machines.

An A B C description of how steel is made has been printed by the Inland Steel Co., Chicago, largely for distribution among the children of its employees. The idea in mind was that children of thousands of steel workers are almost wholly without information as to the exact nature of the work which goes on in the mills where their fathers or brothers are employed. The description of steel-making processes, which is in non-technical terms, was prepared by Walter C. Carroll, vice-president of the company, and copies of the booklet publication will be sent to any person or group who may be interested.

# Course in Foundry Studies

## Indianapolis High School Prepares Students to Enter Foundries—Short Course for General Student

**F**OR those boys who are willing to doff their white collars and get their hands dirty in an effort to learn the practical as well as the theoretical in foundry practice, Indianapolis Arsenal Technical High School, a part of the public school system of Indianapolis, has provided a small foundry in which modern methods are taught.

Two alternatives are offered the students. If they wish to prepare for advanced training in college, or to acquaint themselves with the general metal-working field, they may elect a two-year course in "Metal Crafts," six weeks of which are devoted to instruction in foundry work. If, on the other hand, financial necessity or dislike for further academic studies makes them impatient to become skilled foundrymen as rapidly as possible, they can choose a vocational foundry course extending over a period of two years. In either case, the sequence of study is much the same, except that the longer course gives students an opportunity to become thoroughly versed in foundry practice, whereas the shorter term imparts only a surface knowledge.

In the foundry, which is 50 x 60 ft. in area, there is equipment for approximately 30 boys. It consists of a small cupola, individual molding benches, tumbling barrel, traveling crane, flasks, hand tools, two core ovens and three furnaces for non-ferrous metals. A heat is poured about every two or three weeks, although non-ferrous castings are made almost daily.

While no castings for commercial use are produced, a number of articles of value to the public schools are manufactured by students of advanced ability. For example, clamps for lathe rests, bevel gears, stoker

links, stoker shoes, stoker hooks and anvils are supplied by this school foundry.

### Method of Instruction

Students gain a knowledge of foundry art through hearing shop talks and observing demonstrations by an instructor, and through executing jobs or projects assigned them. In the latter case, the student is required first to prepare an analysis of the job. The mimeographed sheet contains a number of headings corresponding to the operations on that particular job, and he must explain how to go about the work. As an illustration, the sheets on which the boy is to analyze "making a mold," have the following divisions: position of pattern on the follow board, condition of sand, facing sand, ramming the drag, venting the drag, making the joint, parting materials and methods of using, placing gates and risers, gaggers and soldiers, ramming the cope, venting the cope, getting a lift, use of water in swabbing, rapping and drawing the pattern, finishing the mold, cutting gates and risers, facing dust, cores, closing, clamping and weighting, pouring, shaking out, and final remarks.

Before beginning the work of executing a job, the boy is given "operation sheets" detailing the procedure to be followed. These sheets also give information about the tools, equipment, materials, metal analysis, material cost, labor cost, type of mold, type of sand, etc. For example, in making a grooved block in a simple two-part mold, the "operation sheets" are of much assistance. They tell him that he must have these tools: a shovel, a No. 8 riddle, bellows, brush, rammers, "Yankee" slick, heart and spoon slick, trowel,



*Knowledge of the Foundry Art Is Obtained by the Students Through Shop Talks and Demonstrations and Through Doing Jobs Assigned to Them. In executing a job, the student follows "operation sheets," which outline the process, step by step*



*A Two-Year Course in Foundry Practice Is Open to Students at the Indianapolis Arsenal Technical High School. In another course, "metal crafts," six weeks is devoted to foundry work. The foundry is 50 by 60 ft. in area, and there is equipment for about 30 boys*

strike, gate stick, drawspike, rapping bar, gate cutter, sponge and vent wire. One roll-over board, one bottom board and a 12 x 12-in. snap flask are essential equipment. In materials he must have molding sand, facing dust, parting sand and water. The time allotted for the operation is 15 min., while the labor cost is placed at 8c. The following metal analysis is given:

Silicon .....	2.40 per cent
Manganese .....	0.60 per cent
Sulphur .....	0.08 per cent
Phosphorus .....	0.50 per cent

To guide the student intelligently in carrying out this project, the following detailed procedure is outlined:

Ram the drag or nowel.

1. Place roll-over board.
2. Place pattern on the board.
3. Place drag on the board.
4. Riddle sand on the pattern.
5. Tuck sand against straight sides of pattern.
6. Fill drag with heap sand.
7. Pean ram sand against the inside of the drag.
8. Butt ram the drag.
9. Strike off surplus sand.
10. Bed bottom board.
11. Roll over the drag.
12. Remove roll-over board.

Make the joint.

1. Rap lightly on pattern with trowel handle.
2. Smooth joint of mold with trowel.
3. Sprinkle parting sand.
4. Blow parting sand from pattern.

Ram the cope.

1. Place the gate stick.
2. Place cope half of flask.
3. Riddle sand on the joint.
4. Tuck sand around the gate stick.
5. Fill cope with heap sand.
6. Pean ram the cope.
7. Butt ram the cope.

Finish top of mold and form the sprue.

1. Strike surplus sand from the cope.
2. Draw gate stick.
3. Taper top of gate to a funnel shape and pack the sand firmly with the fingers.

Get a lift.

1. Jolt the mold.
2. Rap the drag.
3. Separate the cope from the drag by lifting.
4. Place the cope on the pattern board, with the face side up.

Finish the mold.

1. Fillet sharp edge of sprue.
2. Make necessary repairs to the cope.
3. Blow all loose sand from both cope and drag.
4. Sponge around the pattern.
5. Rap and draw the pattern.
6. Slick the joint.
7. Cut the gate and finish by packing the sand firmly with the fingers.
8. Do any necessary patching.
9. Clean mold by use of bellows and slicks.

10. Apply facing dust.

11. Blow surplus dust from the mold.

12. Replace cope on the drag.

13. Remove snap flask from the mold.

Place the mold on the floor, jacket, weight and pour.

1. Sprinkle loose sand on the floor.
2. Place mold on the floor with a rubbing, twisting motion, so that the mold will settle to a solid bearing.
3. Jacket.
4. Weight.
5. Pour with medium hot metal, keeping the gate flooded.

Shaking out. (Castings must remain in the sand for at least 15 min.)

#### Short Course Outlined

The outline of the six-weeks' foundry course is reproduced below. Emphasis is placed upon the fact that this is not a hard and fast curriculum, but that it is being changed constantly, as experience demands the modification of certain parts or the inclusion of new material. Indeed, it is the best the instructors yet have arrived at, but should not be taken as a perfect model.

#### FOUNDING.

Comparison with other metal-working methods.

General attitude toward the foundry trades.

Modern methods.

Skill required in foundry trades.

Small part played by machinery.

The art of founding depends upon the hand, eye and mind for results.

Foundry equipment.

Up-to-dateness.

Absence of mechanical paraphernalia.

Modern production methods.

Demonstration No. 1—

MAKING AND POURING A MOLD.

MOLDING SAND.

Composition.

Sources of supply.

Artificial or "milled" sand.

Various grades.

Shop Talk No. 2—

TEMPERING SAND.

Wetting.

Cutting.

Sulphur ..... 0.08 per cent

Use and care of shovels.

Japan .....

Job. No. 1—

TEMPERING SAND.

Shop Talk No. 3—

GREEN SAND MOLDING.

Bench tools and their uses.

Two-part bench molds.

Roll-over method.

Demonstration No. 2—

MAKING A MOLD OF A GROOVED BLOCK.

Job No. 2—

SIMPLE TWO-PART MOLD, GROOVED BLOCK.



- Job No. 3—  
TWO-PART MOLD, SINGLE BRACKET.
- Job No. 4—  
TWO-PART MOLD, DOUBLE BRACKET.
- Job No. 5—  
TWO-PART MOLD REQUIRING FILLETS TO BE MADE.  
Large bracket.
- Job No. 6—  
TWO-PART MOLD  
Rocker arm.
- Shop Talk No. 4—  
MOLDS WITH GREEN SAND CORES AND POCKETS.
- Job No. 7—  
MOLDS WITH GREEN SAND CORE.  
Square washers.
- Job No. 8—  
MOLD WITH GREEN SAND CORE.  
Oblong washers.
- Job No. 9—  
MOLD WITH GREEN SAND POCKETS.  
Surface plates.
- Shop Talk No. 5—  
DRY SAND CORES.  
USES.  
Advantages and disadvantages.  
When necessary.  
Materials used in making.  
Methods of making.
- Job No. 10—  
MAKING DRY SAND CORES.
- Job No. 11—  
MOLD WITH DRY SAND CORE.  
Pipe union.
- Job No. 12—  
MOLD WITH DRY SAND CORE.  
Elbow.
- Job No. 13—  
MOLD WITH DRY SAND CORE.  
T-pipe.
- Job No. 14—  
MOLD WITH IRREGULAR JOINT.  
Cylinder. (Depressed joint.)
- Job No. 15—  
MOLD WITH IRREGULAR JOINT.  
Cylinder. (Straight joint.)
- Job No. 16—  
MOLD WITH IRREGULAR JOINT.  
Cylinder. (Arched joint.)
- Shop Talk No. 6—  
Explanations and demonstrations of the ADVANTAGES AND DISADVANTAGES OF EACH TYPE OF IRREGULAR JOINT.
- Job No. 17—  
MOLD WITH IRREGULAR JOINT.  
Yoke.
- Job No. 18—  
MOLD WITH IRREGULAR JOINT.  
Bracket with lugs.
- Job No. 19—  
MOLD WITH IRREGULAR JOINT.  
Rocker arm with lugs.
- Job No. 20—  
MOLD WITH IRREGULAR JOINT.  
Blank gear.
- Shop Talk No. 7—  
BEDDING-IN METHOD OF MOLDING.  
Why this method is sometimes necessary.  
More skill required than in the roll-over method.
- Job No. 21—  
MOLD MADE BY BEDDING-IN PROCESS.  
Grooved block.
- Job No. 22—  
BEDDING-IN MOLDING.  
Grooved block and cylinder.
- Job No. 23—  
BEDDING-IN MOLDING.  
T-bracket.
- Job No. 24—  
BEDDING-IN MOLDING.  
Stove leg.
- Shop Talk No. 8—  
SHRINKAGE AND USE OF RISERS.
- Job No. 25—  
MOLD WITH RISER.  
Anvil.
- Job No. 26—  
MOLD WITH RISER.  
Put shot.

- Job No. 27—  
MOLD WITH RISER.  
Bar bells.
- Job No. 28—  
MOLD WITH RISER.  
Vise castings.
- Shop Talk No. 9—  
MOLDS HAVING MORE THAN TWO PARTS.
- Job No. 29—  
THREE-PART MOLD IN A THREE-PART FLASK.  
Double-nange pulley.
- Job No. 30—  
THREE-PART MOLD IN A TWO-PART FLASK.  
Sheave pulley.
- Job No. 31—  
PRODUCTION WORK. (School equipment, repairs, etc., for students of advanced ability.)  
Stoker links.  
Stoker shoes.  
Stoker hooks.  
Many jobs not listed are made by students, according to their ability, for the maintenance of the school plant.
- Shop Talk and Demonstration—  
ORNAMENTAL CASTINGS.  
Placing patterns.  
Use of fine riddles.  
Parting dust.  
Ramming.  
Small gate stick.  
Venting the cope.  
Careful swabbing.  
Thin, wide gates.  
Spraying.  
Facing dust.  
Use of parting dust at this stage.  
Printing back the pattern.
- Job No. 32—  
ORNAMENTAL CASTING.  
Trays (eight patterns).
- Job No. 33—  
ORNAMENTAL CASTING.  
Book ends (six types).
- Job No. 34—  
ORNAMENTAL CASTING.  
Candlesticks (four types).
- Job No. 35—  
MISCELLANEOUS ORNAMENTAL WORK.  
Patterns brought by students.

In the foundry the pupils are graded according to the value of their workmanship, self-direction, speed, care of tools, and attitude toward the work. The study of allied subjects as well as that of foundry practice itself is stressed constantly. The two-year foundry course is "for the pupil of fixed purpose and limited time for school, to get intensive training for a wage-earning position in his chosen vocation." In it one-half time is devoted to practice, the other half to related and academic subjects. The student is required to take two years of drawing, mathematics and English.

Preparatory School Work Desirable

Although the course may be elected in the first year by a pupil who has made a definite choice of an occupation, it is desirable that it be preceded by as much preparatory training as possible. It is suggested by the school authorities that the preliminary period of high-school study should be at least one year in length.

Here, then, is an opportunity for a boy to get into the atmosphere of a foundry. Class-room knowledge is recognized as an essential part of his training, but the practical side does not suffer as a consequence. He acquires the first principles of foundry technique before he is compelled to measure his worth with that of the man who long ago served a grueling apprenticeship in a commercial foundry.

Sheet Sales and Shipments for Six Months

Sheet steel manufacturers representing approximately 75 per cent of the country's capacity sold 1,474,585 net tons, produced 1,775,128 tons and shipped 1,762,423 tons in the first six months of the year. In these respects the first half of the year made a materially better showing than in the same period last year. In sales the gain was 66,959 tons, in production 77,264 tons and in shipments, which really tell the story of business, 217,709 tons.

The compilation for the six months discloses an excess of shipments over sales of 287,838 tons, while for the same period in 1925 the excess was only 137,088 tons. The unfilled orders at the end of 1925 were 677,907 tons, while at the end of June they amounted to 422,237 tons, a decrease of 255,670 tons.

The record for the six months makes the following comparison with the same period of 1925.

	1926	1925
*No. of mills.....	711	701
Capacity, net tons.....	2,555,815	2,477,700
*Per cent reporting.....	74.7	74.7
Sales, net tons.....	1,474,585	1,407,626
Production, net tons.....	1,775,128	1,697,864
Shipments, net tons.....	1,762,423	1,544,714
Unfilled orders (June 30), net tons .....	422,237	440,687
Unshipped stocks (June 30), net tons .....	121,288	80,938
Unsold stocks (June 30), net tons .....	55,140	51,614
Average Percentages to Capacity		
Sales .....	76.9	74.4
Production .....	93.1	90.5
Shipments .....	92.4	83.7
Unfilled orders (June 30)...	132.2	142.9
Unshipped stocks (June 30)	38.0	25.3
Unsold stocks (June 30)....	17.3	16.2

\*Average.

# High Production in Drilling Plates

Hourly Output of 800 11/16-Inch Holes in 1/4-Inch Plate Claimed for New Heavy Type Plate and Rivet Hole Driller

UNUSUALLY high production on duplicate plates is claimed for the heavy type plate and rivet hole driller here illustrated, which has been developed by the Cincinnati Bickford Tool Co., Cincinnati, primarily for use in boiler, tank and structural shops.

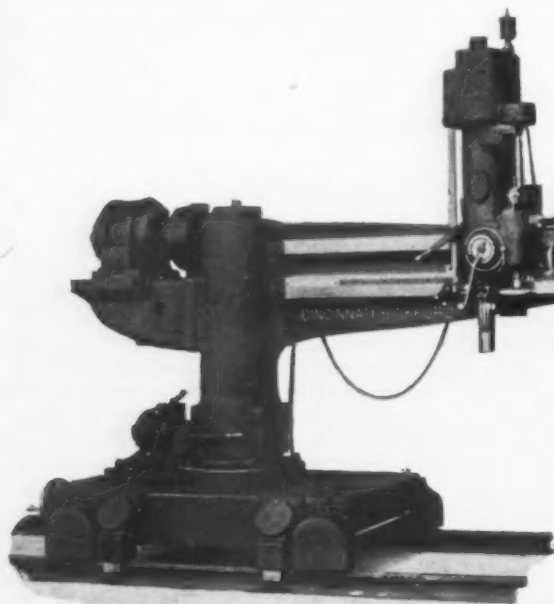
The machine consists of a special type of radial drill with the base mounted on wheels and arranged for traveling under its own power on a track parallel to a bench or trestle on which the plates to be drilled are stacked. The method consists of stacking as many plates as the length of the twist drill will permit. A plate from a previously drilled lot is used as a template. While one stack is being drilled another is being set up on the other end of the bench. When one stack

type construction, heavily ribbed, and has an extension on the rear for mounting the 10 to 15 hp. driving motor. The arm can be furnished in 4, 5, 6 or 7-ft. lengths.

The arm swings upon the column which is secured to the base by means of a heavy flange. It is strongly reinforced throughout with heavy ribbing. Provision is made on the lower part of the column for clamping the arm rigidly in position while drilling, which is stressed as an important factor in preventing drill breakage.

Another feature facilitating production is the provision for easy and rapid movement of the head along the arm, the head being balanced so that little effort is required to move it. A large handwheel on the right of the head moves it 1 1/4 in. per revolution. About one-eighth of a revolution of this handwheel is lost motion; this provides a hammer blow effect for the fine adjustment of the head on the arm whereby an accurate alinement of the drill with the holes in the template is quickly obtained.

Four changes of speed are obtainable through a



*The Machine Moves Under Its Own Power and Means Are Provided for Clamping It to the Rails. Machine at right has electric column binder for the arm*



is finished the operator runs the machine under power to the other stack and continues drilling.

Only one man is required to operate the machine. The usual labor gang is only used to stack the plates on the bench prior to drilling and to remove those which have been drilled. Laying out of holes is practically eliminated, as a plate from a previously drilled lot serves as a template. Idle machine time is minimized, occurring for the most part only when the machine is traveling between the two stacks of plates. Economies in erecting are also stressed, and it is stated that reaming is largely eliminated. Drill breakage is said to occur rarely, because of the extreme rigidity of the machine.

The general construction of the machine may be noted from the illustrations. Although of massive and rigid construction, the arm swings under the pressure of one finger, and by thus enabling the operator to position the drill with a minimum of time and effort, rapid production is facilitated. This feature is made possible through the use of large diameter, hardened steel rollers, roller bearing mounted, which bear on a hardened and ground steel ring. The arm is of box-

selective, sliding-gear type transmission in the head. The gears and shafts are of heat-treated alloy steel. Feeds are instantly obtainable through a lever-operated dive key. Clutches provided for starting, stopping and reversing the spindle are operated by a conveniently located lever at the right of the spindle. These clutches are fully inclosed and run in oil and may be adjusted conveniently.

The spindle is of alloy steel, which in having an ultimate tensile strength of approximately 200,000 lb. and a hardness of nearly twice that of ordinary spindle steel, assures unusually long life to the tang slot and the taper in the spindle nose. The feed rack and feed pinion are of the same material. Ball thrust bearings are provided at both top and bottom of the spindle sleeve.

The head is fully inclosed and the mechanism thoroughly protected from dirt and chips. A large sight-feed oiler supplies ample lubrication to bearings.

## Method of Disengaging Power Feed a Feature

The feed trip automatically disengages the power feed when the drill penetrates the bottom plate of the

stack. It acts directly on the main feed clutch instead of disengaging an auxiliary clutch, as commonly done. As a result, two less movements are required of the operator for each hole drilled. This is stressed as an exclusive feature of this machine and as effecting a significant saving in time between holes.

A countersinking attachment is available for use with the machine. It consists of a long lever attached to the feed pinion shaft, which provides a powerful lever feed to the spindle. With this attachment the operator can position the head and arm with one hand and countersink with the other. This, it will be recognized, provides a rapid method of countersinking.

A hand lever for clamping the arm is furnished as standard equipment, but if desired, either an electric or a compressed air arm-clamping device may be provided. The control of both devices is located on the head near the spindle, the operator clamping and unclamping the arm without leaving his operating position at the head. Where only hand clamping is used the operator is required to make two trips from the head to the column for each hole drilled. The time saved by the use of either electric or air arm-clamping equipment is stated to soon absorb its cost.

The base of the machine is of heavy construction, and is strongly reinforced throughout with heavy, flanged ribs. The wheels are of steel, machined, and carbonized. They are mounted on roller bearings and are thoroughly protected from dirt and chips. Provision is made for locking the machine to the rails by means of four clamps located near the wheels. These

clamps grip both sides of the rail head and are operated in unison by a large diameter handwheel. An equalizing system insures uniform clamping. A 2-hp., constant-speed motor, mounted on the base, furnishes power for propelling the machine on the track. It is geared direct to the axle through a worm drive and is controlled by a reversing, drum type controller.

Special constructions of the machine, to meet various requirements, are available. The machine can be equipped with either of two types of stationary base, a short base which merely serves as an anchorage, or a standard radial drill base having a large working surface with tee slots. If thought desirable to have one man operate two machines, the machines being located on opposite sides of the bench on which the plates are stacked, the machines can be equipped with right and left arms, in order to minimize the distance traversed by the operator in going from one to the other.

If, in addition to plate drilling, the machine is to be used on a general class of work, the company's standard radial drill, mounted on the track-type base, can be furnished. Provision is made on this machine for raising and lowering the arm to accommodate various heights of work. A wall radial for column or gantry mounting is also available. The column of the machine illustrated can be furnished in lengths to give any distance between the top of the rails and the spindle, from 4 ft. 8 in. to 6 ft. 2½ in., the overall height of the machine being affected accordingly.

### Extends Line of Electric Hoists

Six electric monorail hoists with rated capacities of 3, 5, 6, 8, 10 and 12 tons, respectively, have been added recently to the line of Lo-Hed hoists offered by the American Engineering Co., Kensington Station, Philadelphia. Each of the new hoists is available in types for bolt suspension, hand-gear trolley, motor trolley and cab control. Open cabs are provided for indoor



*The Drum and Motor Are Placed On Opposite Sides of the Track, So That Load Block Can Be Drawn Up Between Them*

use and closed cabs for outdoor service. Push-button control or remote control can also be supplied and foundry-type control is provided when desired.

These hoists, which are designated as the class J, incorporate the same principles of design as the ½ and 1-ton models described in *THE IRON AGE* of Sept. 25, 1924 and April 1, 1926, respectively, with such additional features as are made necessary by the higher speeds at which they operate and the heavier loads

they are designed to handle. As in the hoists previously described, the drum and motor are placed on opposite sides of the I-beam track, so that the load block can be drawn up between them until it almost touches the rail, which permits of operating in a minimum of headroom.

The hoist operates on standard I-beams, through switches and around curves. Hyatt roller bearings are provided on the trolley wheels and ball-thrust bearings between the wheels and the trolley frames. This, combined with the straight spur gear drive and the driving of the wheels on both sides of the I-beam, is stressed as facilitating movement of the hoist along the rail. The trolley trucks are swiveled for going around curves of short radius.

The ball-bearing hoisting motor is entirely inclosed and drives the drum by spur gears running in oil. Hyatt bearings are provided on the ends of the shafts. Operating parts are made accessible for inspection and care by removing the cover of the hoist. The motor and pinion can be removed as a unit without taking off the gear cover or draining the oil from the gears. A swivel hook is provided on the load block. Safety features include a factor of safety of five in the design of the hoist; upper limit stop and a quick-acting brake which is applied automatically the instant the current is turned off. This brake stops all movement of the load without drift.

### Oil and Gas Power Prize Awarded

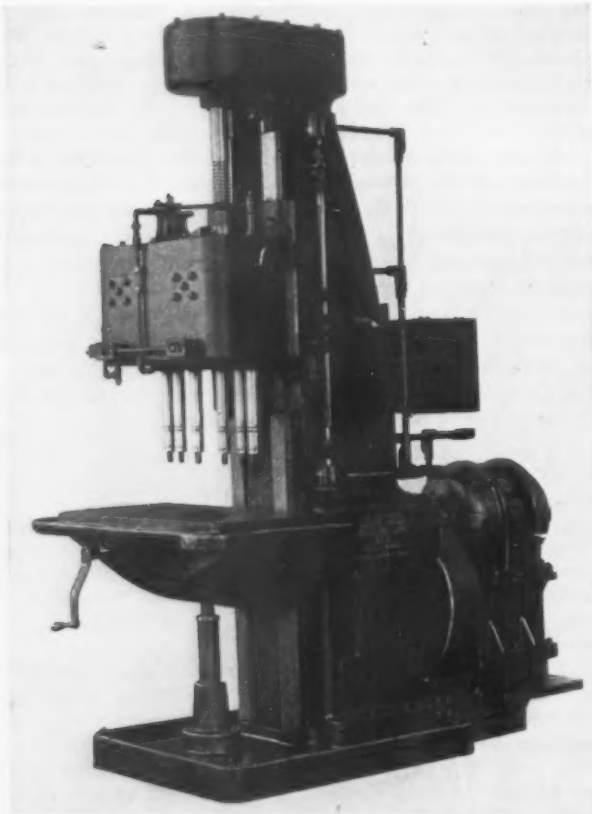
A series of meetings was held throughout the country during the week of April 19-24, having for their purpose the focusing of attention on the part of engineers, chemists, physicists, operating men and the industries on recent progress and immediate possibilities in the utilization of oil and gas for power purposes. A cash prize of \$100 was offered for the best paper submitted during this week, and the steering committee now announces that it has been decided to award this prize to Fred Thilenius, assistant master mechanic, Prairie Pipe Line Co., Tulsa, Okla., for his paper on "Oil Engines as a Drive for Pipe-Line Pumps," presented at the April 22 meeting of the Mid-Continent Section of the American Society of Mechanical Engineers. The award will take place at the oil and gas power session of the society's meeting in December.



## Machine for Production Tapping of Gas Engine Cylinder Heads

A six-spindle fixed-center tapping machine, developed primarily for the use by gas engine manufacturers in the tapping of spark plug holes and for similar work in cylinder heads, has been brought out by the Defiance Machine Works, Defiance, Ohio. The machine is a single-purpose production unit and its output is 30 to 45 tapped heads or blocks per hour.

The machine, designated as the No. 10, is equipped with a heavy frame, mounted on a broad, ribbed base.



*Six-Spindle Machine Designed for Tapping Spark Plug Holes. Production is at rate of 30 to 45 blocks per hour*

The frame has broad slides planed the full length of the upright which are scraped for the sliding and gibbed surfaces of the head and table. The fixed center head, which carries the spindles, may be arranged with either four, six or eight spindles, spaced to suit requirements. The spindles are of large diameter and are of hammered steel. They are mounted in bronze and ball thrust bearings.

The table, of the knee type, is mounted on a heavy jack screw which is raised or lowered by means of a crank at the front of the machine. The working surface of the table is 20 in. x 36 in. The distance from the nose of the spindle, when up, to the top of the table is 32 in. and the distance from the center of the spindle to the face of the column is 8 in. The time required to load, unload and tap all holes in the cylinder head is approximately 2 min.

The feed mechanism operates the fixed center tapping head up and down along the slides with a heavy screw driven by cut gears. The feed shaft bearings are bronze bushed and end thrust is taken by ball bearings. The head has a maximum vertical travel of 12 in. The adjustable stops can be set to regulate the travel from 2 in. to 12 in., as desired. The spindle head can be stopped or reversed instantly at any position of either the up or down stroke. It reverses automatically at the bottom of the stroke and returns to the top of the stroke and stops.

The machine is equipped only for direct connected motor drive. Electric push button, automatic trips and cut-outs are provided. A 10 hp. reversible motor

with a speed range of 725 to 900 r.p.m. on the down travel is recommended. The floor space occupied by the machine is 33 in. x 66 in. The net weight of the six-spindle machine is 6,000 lb.

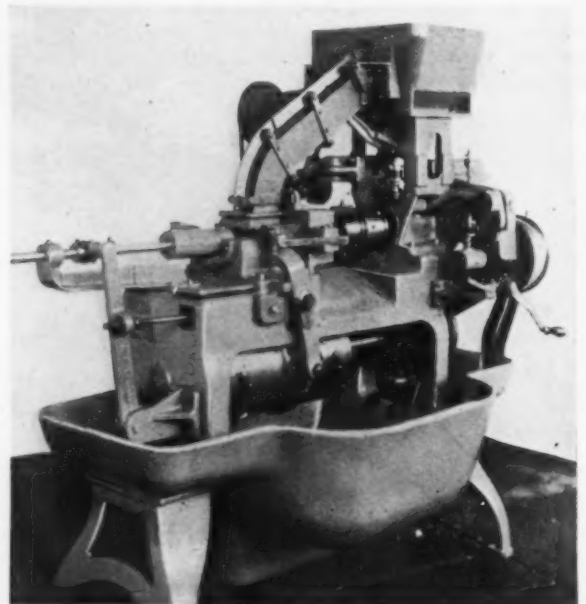
## Cap Screw and Bolt Threading Machine Arranged for Automatic Operation

An entirely automatic machine for the threading of cap screws or of machine or special bolts has been added to the line of the Kent Machine Co., Kent, Ohio. The machine is adjustable to accommodate a range of sizes within its capacity. Two sizes of the machine are available, one for cap screws up to  $\frac{1}{2}$  in. in diameter and the other is for screws above  $\frac{1}{2}$  in. in diameter. The smaller machine is designed to accommodate screws  $3\frac{1}{4}$  in. under the head and will thread the body of the screw a length of  $2\frac{1}{2}$  in. The larger machine will thread screws 4 in. under the head, and will cut a thread  $2\frac{1}{2}$  in. in length.

The hopper feed is designed so that the only change needed for different sizes of work is the agitating plate in the center of the hopper, a number of these plates being furnished with each machine. These plates may be quickly changed.

When the machine is used for threading capscrews the chute from the hopper delivers the cap screw blank to a carrier from which it is transferred to holding jaws for the threading operation. The cap screw is held by the head of the blank and an internal trip on the die head regulates the length of thread on the screw. When threading bolts the action of feeding is similar to that of the cap screw, with the exception that the bolt is held in the clamping jaws by the shank of the bolt, to assure threading concentric with the shank.

After the blank has been fed to the threading posi-



*The Hopper Feed Is Designed So That In Changing to Work of Different Size Only the Agitating Plate Is Changed*

tion, the threading spindle carrying the die head is advanced automatically for the threading operation. When the screw or bolt has been threaded the desired length and the die head automatically opens and backs off of the blank, the gripping jaws which hold the cap screw are automatically released and the finished product is ejected positively from its threading position by a new blank.

The Wabash Railroad has closed a contract with the Toledo Shipbuilding Co., Toledo, Ohio, for a car ferry for operation in Lake Michigan. This boat will be 380 feet long.

## NEW SIDE HEAD BORING MILL

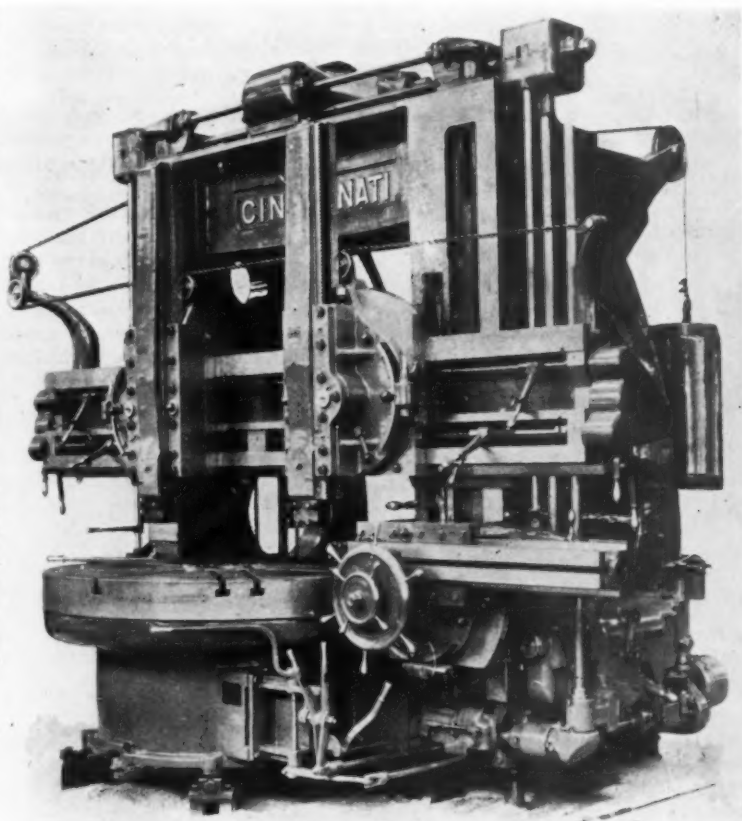
### Addition of Third Head Permits of Boring, Facing and Turning Simultaneously

Reduction in the cost per piece machined, because of simultaneous boring, facing and turning, is stressed in connection with the 6-ft. rapid-traverse side-head boring mill here illustrated, which is being added to the line of the Cincinnati Planer Co., Cincinnati.

The side head is arranged so that work of any height within the capacity of the mill may be machined, and its construction permits a reach almost to the cen-

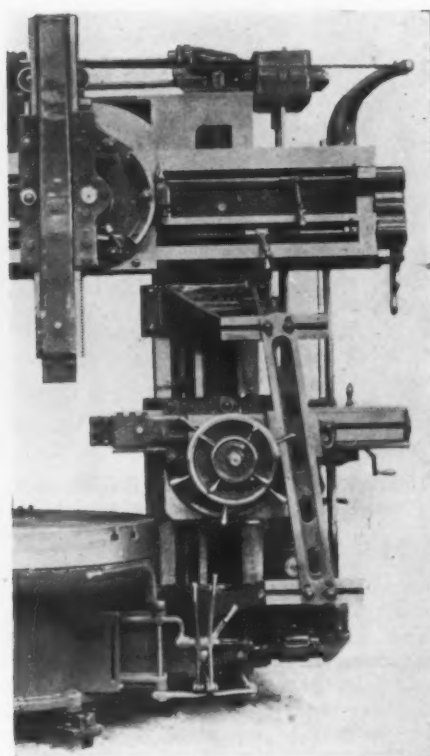
stop levers have been brought to the same position. These levers have been designed so that operation of mill is not interfered with. Locating these levers at the front of the machine provides convenient centralized control of the machine.

The construction of the housing and saddle are similar to that of the rail and saddle. The narrow guide has been incorporated in the design of the side head. The housing face has been increased considerably to give a strong, rigid housing, and when securely bolted and dowelled to the bed, permits of running the side head to the extreme height and of taking very large cuts. The ram, which is of cast iron, has a steel rack



*The Side Head Is Arranged for Machining Work of Any Height Within the Capacity of the Mill. The construction permits of reaching almost to center of the table*

*The Crowning or Taper Attachment and the Thread Cutting Attachment Extend the Adaptability of the Mill*



ter of the table. The side head can be provided with a crowning or taper attachment or with a thread cutting attachment. By means of these attachments the adaptability of the mill is materially extended.

The feed box is located on the side of the housing in a position similar to that of the standard boring mill. Reverse of the feed can be obtained from boxes placed on either end of the feed box. The arrangement is such that power feed can be used to feed the head up or down or feed the ram into the work.

The side head has power rapid traverse in all directions, the power being obtained from an individual motor mounted on the side of the housing. This motor is controlled by means of a drum controller, shifting of the lever of which changes the direction of the motor, giving rapid traverse up or down or in and out. Throwing in the power rapid traverse lever automatically disengages the feed. The side head on the boring mill does not interfere with the use of the rapid traverse lever for the rail head.

The levers for the side head are located conveniently on the side of the machine. The table speed-change levers have been brought to the front of the machine in front of the side head as shown, and the start and

bolted to it which permits of convenient replacement of the rail in case of accident. Taper gibs are used throughout the head.

### Sales of Castings Decline

Sales of commercial steel castings in June, as reported by the Department of Commerce, amounted to 68,030 tons, or 53 per cent of capacity, as compared with 78,889 tons and 61 per cent of capacity in May, and 86,685 tons and 67 per cent in April. They were heavier than in June a year ago, however, when sales amounted to 62,700 tons, or 50 per cent of capacity.

Bookings of miscellaneous castings showed an increase for the month, amounting to 52,038 tons, or 75 per cent of capacity. Sales of railway specialties, however, declined sharply to 15,992 tons, or 27 per cent.

For the first six months of this year bookings of all steel castings totaled 537,797 tons, or 70 per cent of capacity, as compared with 451,822 tons, or 60 per cent, for the same period in 1925.

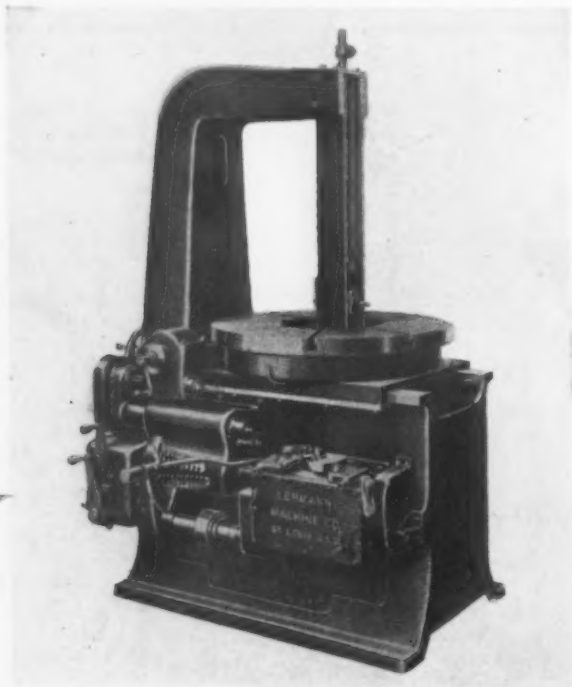
Production of steel castings in June amounted to 93,392 tons, or 73 per cent of capacity, as against 95,608 tons and 74 per cent in May.



### Convenient Operation Features Oil Groove Milling Machine

A machine intended for use in milling oil grooves in crown brasses for locomotives, but which may be adapted conveniently to other work of a similar nature, has been placed on the market by the Lehmann Machine Co., St. Louis.

It is designed to cut two oil grooves parallel with the axis disposed at 45 deg. from the apex with two diagonal grooves connecting the one end of each parallel groove with the reverse end of the other. It can cut the diagonal grooves deeper at the apex,



*Control of the Machine Is By Means of One Handle. Provision is made for disposal of chips inside of machine base*

where the brass is usually thicker and wears the most. The capacity of the machine is from 7 in. to 14 in. in diameter and up to 22 in. in length. The machining is rapid, the feed of the cutter being 4 in. and 6 in. per min. The full depth may be cut at one time and the relative depths of side and apex grooves may be selectively predetermined.

The construction of the machine may be noted from the illustration. A head carrying a three-groove end mill travels in the slides of the central vertical column. This column is secured rigidly at the bottom and is fastened at the top to the main column as shown. The table is equipped with a device for holding the brasses in position and means are provided for determining the correct location. Lateral movement of the table permits the cutter to be fed to the brass to the desired depth. The table has a rotary movement which is coordinated with the vertical movement to cut the diagonal grooves. A feed box with 40 quick changes of feed controls the rotary movement of table and this is provided with an index indicating the length of straight grooves to which the diagonal grooves are formed. The operator need only select the length of the straight grooves and drop the plunger of the quick change into the hole which designates this dimension. Control is by means of one handle. This handle when in a central position gives a straight vertical movement to head; when moved to the left, gives a left diagonal movement; again to the center a vertical movement; and to the right a right diagonal movement, completing the operation with four movements of the handle. Neutral positions are provided between all feed positions.

Stops for both the upper and lower position of the cutter are provided with a graduated index. These stops are set before the operation for the length of

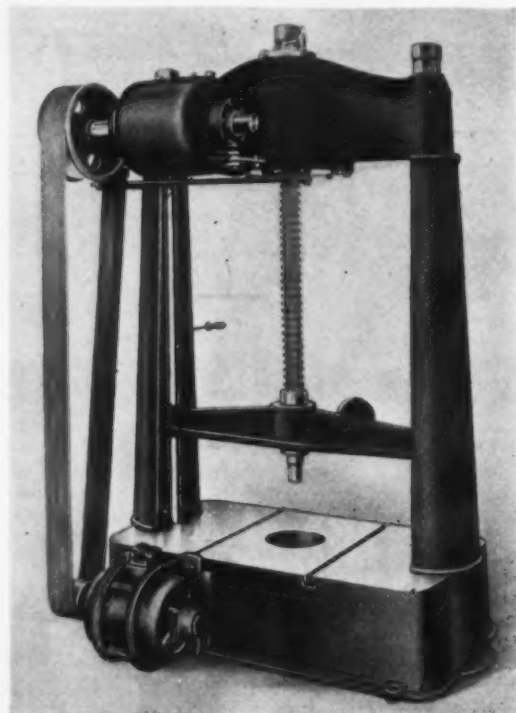
slot desired, which relieves the operator from the necessity of throwing the control handle at precisely the right time. The feed of the cutter comes to a stop at the extremity of its movements until control handle is thrown to its succeeding operative position. The various movements have handles for manual operation or independent power movement for obtaining setting up positions.

The drive is through silent chain from a 5-hp. motor on the back of the machine. A countershaft may be substituted for the motor when it is desired to drive from line shaft. All gears are heat treated; shafts are of alloy steel and ball bearings are provided throughout. Positive clutches are also of alloy steel and heat treated. The weight of the machine, with motor, is 4650 lb.

### Power Press for Work Requiring 50 Tons Pressure

The Atlas Press Co., Kalamazoo, Mich., is placing on the market a 50-ton power driven press designated as the No. 63, which is shown in the accompanying illustration.

The standard machine is intended for work requiring up to 50-ton pressure, and the travel of the ram is approximately 7 ft. per min. By changing the lead of the driving worm, gear and screw, the speed may be increased or decreased as desired for production operations, but the pressure will decrease where speed is obtained. Special bases or fixtures may be furnished



*The Clutch Is of Multiple Disk Type and Is Operated by Lever, Which May Be Adjusted to Convenient Height*

for special requirements and uprights of various lengths may be provided for the accommodation of long work. The standard base is a planed surface with tee slots and keyways for fitting jigs and fixtures.

The design incorporates a marine-type multiple disk clutch, which is engaged by means of a lever at the right hand of the housing. This lever is arranged so that it may be adjusted at the height most convenient for the operator. The action of the clutch is easy and it may be set to slip beyond the required tonnage. The thrust of the screw is taken by ball thrust bearings and thrust on the worm by radial ball thrust bearings. The remainder of the bearings are ball bearings. If furnished with single lead screw, pressure may be held indefinitely at any point up to



capacity, and on such work the clutch is released, no power being consumed.

Two drive arrangements may be furnished, by belt from the line shaft or with individual 5-hp. motor drive as shown. The motor base and hydraulic pressure gage are extra equipment. The distance between housings is 37 in. The maximum movement of the ram is 30 in. The floor space occupied is 30 x 54 in., and the height of the standard machine is 81 in. over all. The shipping weight is 3500 lb.

### Interlocking Bolt and Nut

An interlocking bolt and nut that is declared to be an improvement over the original Stevenson safety nut and bolt has been brought out by R. D. Stevenson, 978, the Arcade, Cleveland. It is a combination of a bolt, washer and nut. The bolt has two opposite parallel grooves and the washer two inner lugs that fit into these grooves. The washer is cupped so that it can be easily applied, as its lugs do not begin to bind in the base of the grooves until pressure is applied by screwing on the nut and causing the washer to flatten out. When the washer is flattened by the pressure of the



*Washer is Cupped So Lugs May Be Made to Grip Bolt Grooves, and Outer Rim of Washer May Be Upset Into One of the Four Chucks in Nut*

nut, the lugs bind in the base of the grooves equally on both sides, anchoring the washer against any lateral or horizontal movement. Consequently, it is claimed that the nut will not loosen through vibration and a permanent lock of the nut is obtained at the point of contact of the nut and the elements that are being bolted.

The nut is locked by upsetting the outer rim of the washer into any one of the four chucks in the nut, this being done with an upsetting chisel. To unlock the nut the bent portion of the washer is straightened.

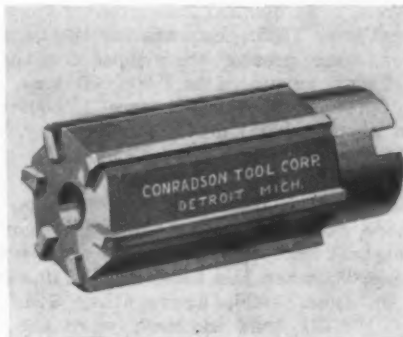
The three members have been designed with a view of keeping the costs down close to the cost of making a standard bolt and nut. The slots in the hot pressed bolt are formed in the bar when it is rolled, so that no extra operation is required. The blank bolt, as it comes from the bolt header, has the two slots running the entire length from a point back of the head. It is stated that the slots do not interfere with cutting threads on the bolt blank. The nuts are made on standard hot nut machines with special forming dies to form the chucked nut. The washer is cupped at the same time that it is punched.

Patents on the interlocking nut and bolt have been issued in the United States and Canada. Mr. Stevenson, the owner, plans to grant licenses for their manufacture to bolt and nut works.

### Improves Line of Die Cast Reamers

Improvements have been made in the die-cast reamers developed by the Conradson Tool Corporation, 2659 Clay Street, Detroit. As stated in the description of these reamers in THE IRON AGE of Aug. 28, 1924, this tool has a die cast body and high-speed steel blades. The body is of a tough hard alloy having a tensile strength of 50,000 lb. per sq. in. and is said to have the physical properties of machine steel. Die casting of the body is stressed as reducing the cost of manufacture from 25 to 50 per cent, with consequent savings to the users.

In the improved line of reamers the taper of the blades has been increased to assure that the blades



*A Steel Collar Has Been Added to Protect and Strengthen the Tool*

will be held in place under all working conditions. A steel collar has been added to protect the tool when it is driven off the arbor, and also to strengthen the neck in case the arbor is worn and the drive placed on the tangs. A steel spring of two coils is placed under the blade to reinforce the entire structure. The tool is now available in more than 40 sizes, ranging from 13/16 to 3 in. in diameter. It is designed to fit any standard arbor.

### Adjustable Hand Reamer

The adjustable hand reamer here illustrated, manufactured by the Foster-Johnson Co., Elkhart, Ind., is graduated to read off the amount of contraction or expansion in thousandths of an inch. The blades of this tool, which expand parallel to one another, may be expanded when inserted full length into the work. Their adjustment is effected by means of a knurled nut at the top of the reamer. The bottom part of this nut carries the graduations. The tool is of course removed by contracting the blades and lifting straight out.

The blades, it is stated, do not enter the work when expanded within it, but are only firmly seated against the walls until revolved. During the first quarter revolution the blades are said to feed out to the full depth of the cut to which they are adjusted by the knurled adjusting nut. This is accomplished through a spring collar.

The reamer is built in five sizes, from 1 1/4 in. to 4 1/4 in., ranging in expansion from 1/8 in. on the small size to 1/4 in. on the largest.



The New Orleans Association of Commerce has published a booklet entitled "Industrial New Orleans," which is a compilation of facts and figures regarding New Orleans as a manufacturing center. Steel plants and machine shops are mentioned among those lines of industry for which New Orleans is considered by the trade organization as a suitable location.

# Marked Rise in June Imports

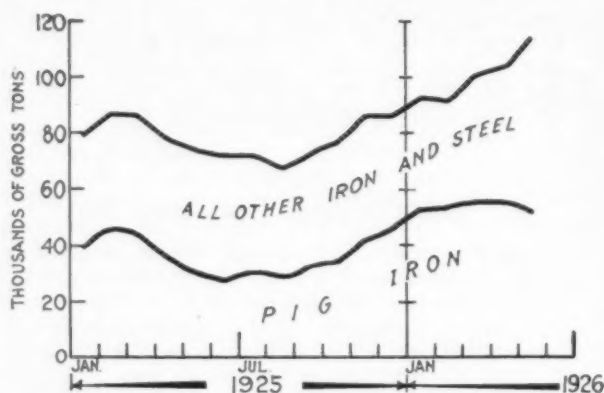
Pig Iron 34 Per Cent of Total But Increase in Rolled Steel—Exports at Year's Average

WASHINGTON, July 27.—Aggregating 1,948,000 gross tons, exports of iron and steel products from the United States during the 12 months ended June, 1926, were over 300,000 tons greater than exports for the fiscal year 1925. Exports for the fiscal year 1924, however, were greater than those for the fiscal year 1926, having amounted to 2,009,000 tons. Exports in June of the present year were 159,506 tons, which showed a substantial decline under May, with a total of 173,418 tons.

Imports for the fiscal year ended June, 1926, reached the high total of 1,080,781 tons, an increase of 331,388 over imports for the fiscal year 1925. This is the highest import movement for any fiscal year since that of 1903, when the total was 1,719,548 tons. Imports in June, 1926, aggregating 124,215 tons as against 108,731 tons in May, were the highest for any single month since November, 1922, with a total of 141,176 tons. Of the imports during the 12 months ended June, 1926, pig iron represented 528,305 tons or almost 50 per cent while pig iron imports in June were 43,106 tons or 34 per cent of the month's total.

Of the exports in June of the present year Canada continued to be the principal buyer, taking 74,532 tons, while for the six months ended with June, Canada took 403,833 tons out of a total of 1,028,583 tons. Japan and Chosen ranked second taking 12,099 tons, while for the six months the total going to these countries amounted to 130,340 tons.

Exports to North and Central America and the West Indies during the six months ended June, 1926,



SINCE the Middle of 1925 There Has Been a Rising Tide of Iron and Steel Imports. Latterly the monthly volume of pig iron shows an increase in the twelve months of fully 80 per cent and the monthly volume of all items of imported iron and steel an increase of 60 per cent. Since and including December, pig iron has represented over one-half of the total until June, when the amount of pig iron dropped somewhat though the amount of steel sharply increased. The curves were plotted on a three-months moving average centered, to smooth out month-by-month fluctuations

aggregated 541,289 tons as against 457,548 tons for the same period of last year. The next largest foreign consuming group of American iron and steel was the Far East, which, for the six months ended June, 1926, took 242,127 tons as against 135,935 tons for the corresponding period last year.

Boiler tubes and welded pipe represented the largest items of export in June, while the next largest item

Exports of Iron and Steel from the United States  
(In Gross Tons)

	June		Twelve Months Ended June		May, 1926	First Six Months	
	1926	1925	1926	1925		1926	1925
Pig iron .....	1,369	2,507	30,587	29,563	1,107	9,116	11,203
Ferromanganese .....	107	17	1,694	4,204	1	278	4,080
Scrap .....	12,309	12,985	97,691	70,293	12,654	62,215	43,097
Pig iron, ferroalloys and scrap .....	13,785	15,509	129,972	104,060	13,762	71,609	58,380
Ingot, blooms, billets, sheet bar, skelp .....	4,680	5,231	85,369	88,058	7,981	29,173	31,282
Wire rods .....	1,034	2,573	17,902	19,930	1,899	9,641	12,941
Semi-finished steel .....	5,714	7,804	103,271	107,988	9,880	38,814	44,223
Steel bars .....	8,630	7,182	124,240	96,752	10,529	68,062	55,770
Alloy steel bars .....	337	226	3,962	3,407	273	2,575	2,304
Iron bars .....	344	560	3,977	4,543	519	2,147	2,785
Plates, iron and steel .....	14,070	8,378	118,874	86,174	11,155	68,251	53,827
Sheets, galvanized .....	12,410	9,600	159,894	144,784	13,196	88,338	88,714
Sheets, black steel .....	11,563	5,346	149,098	102,612	17,415	91,177	37,510
Sheets, black iron .....	1,580	1,136	19,552	11,863	1,461	10,985	6,191
Hoops, bands, strip steel .....	3,526	3,427	46,947	34,053	3,929	25,795	19,781
Tin plate; terne plate .....	12,432	11,284	181,943	140,439	13,408	98,342	77,777
Structural shapes, plain material .....	15,945	7,503	136,991	98,701	15,618	75,919	43,267
Structural material, fabricated .....	5,655	4,122	85,296	66,346	5,301	43,643	32,397
Steel rails .....	14,495	15,660	147,284	180,493	11,405	71,191	75,597
Rail fastenings, switches, frogs, etc. ....	2,681	3,980	38,856	32,604	2,742	20,162	16,673
Boiler tubes, welded pipe and fittings .....	16,673	16,376	264,364	201,136	20,063	134,316	109,623
Plain wire .....	2,320	3,068	35,903	31,510	3,394	19,442	19,135
Barbed wire and woven wire fencing .....	4,597	5,216	64,751	85,349	4,925	30,817	37,182
Wire cloth and screening .....	211	143	2,022	1,318	189	982	911
Wire rope .....	310	296	6,346	4,070	593	2,618	2,318
Wire nails .....	802	489	11,867	9,549	1,145	6,187	4,157
Other nails and tacks .....	712	595	8,978	8,645	719	4,376	4,637
Horseshoes .....	87	15	699	758	15	327	334
Bolts, nuts, rivets and washers, except track .....	1,107	1,299	15,609	17,696	1,121	7,060	8,416
Rolled and finished steel .....	130,487	105,901	1,627,458	1,362,802	139,115	872,721	699,306
Cast iron pipe and fittings .....	4,848	3,014	36,507	29,517	5,854	19,013	14,708
Car wheels and axles .....	1,461	2,161	16,321	23,425	1,706	8,539	11,304
Iron castings .....	1,085	840	10,325	8,544	814	4,476	4,563
Steel castings .....	358	290	6,160	4,982	856	4,659	2,708
Forgings .....	315	127	2,518	1,913	178	1,509	1,161
Castings and forgings .....	8,067	6,432	71,831	68,381	9,408	38,196	34,444
All other .....	1,453	*1,201	12,770	*3,793	1,253	7,243	5,942
Total .....	159,506	136,847	1,948,860	1,647,024	173,418	1,028,583	842,295

\*Beginning with April, 1925.

United States Imports of Iron and Steel Products by Countries of Origin  
(In Gross Tons)

From	June, 1926	6 Months, 1926	May, 1926
Austria .....	28	377	23
Belgium .....	29,501	105,409	18,055
Czechoslovakia .....	15	668	6
Finland .....	.....	799	2
France .....	12,541	74,528	20,640
Germany .....	32,585	128,809	28,678
Italy .....	102	266	125
Lithuania .....	.....	1,530	.....
Netherlands .....	8,474	59,456	6,207
Norway .....	3,103	8,911	877
Poland and Danzig .....	259	259	.....
Sweden .....	3,942	14,311	1,724
United Kingdom .....	9,909	97,308	15,320
Other Europe .....	2	41	3
Europe .....	100,461	492,672	91,660
Canada .....	.....	5,208	33,814
Panama .....	.....	7,748	.....
Mexico .....	7,757	7,929	.....
British West Indies .....	.....	403	.....
Cuba .....	.....	3,599	2
Other America .....	4	71	.....
America .....	12,969	53,553	5,063
India .....	10,775	66,708	12,005
Other Asia .....	10	25	3
Total .....	124,215	612,969	108,731

Exports of Iron and Steel in Gross Tons

	All Iron and Steel	Pig Iron	Semi-Finished Material
*Average, 1912 to 1914....	2,406,218	221,582	145,720
*Average, 1915 to 1918....	5,295,333	438,462	1,468,020
*Average, 1919 to 1923....	3,078,724	123,837	149,218
Calendar year 1924.....	1,805,073	41,478	114,417
January, 1925 .....	141,777	1,298	5,764
February .....	102,299	1,413	7,516
March .....	155,384	2,037	7,951
April .....	155,375	1,632	6,831
May .....	150,612	2,316	7,360
June .....	136,847	2,507	7,804
Fiscal year 1925.....	1,663,084	29,563	107,988
July .....	139,861	2,348	10,701
August .....	188,465	5,944	8,024
September .....	136,791	3,349	8,186
October .....	141,817	2,874	8,432
November .....	171,134	4,272	16,783
December .....	142,209	2,626	12,282
Calendar year 1925.....	1,762,571	32,674	108,681
January, 1926 .....	174,585	1,663	4,388
February .....	157,187	1,478	5,615
March .....	169,438	1,489	6,060
April .....	194,449	2,010	7,167
May .....	173,418	1,107	5,880
June .....	159,506	1,369	5,714
Fiscal year 1926.....	1,948,860	30,587	103,271
*Calendar years.			

of export in June was plain structural material, mostly going to Canada.

Of the 14,070 tons of plates exported in June, 12,014 tons went to Canada. Exports of tin plate for the month amounted to 12,432 tons, Canada again being the largest customer, while British India ranked second. Canada also was the leading taker of black steel sheets in June, with Japan second.

The largest item of imports in June of the present year was pig iron, with a total of 43,106 tons, which showed a considerable decline under May, when similar imports amounted to 57,211 tons. Of the June imports, Germany led as the principal source, providing 15,535 tons. Despite the countervailing order applying to

imports of pig iron from the Tata Iron & Steel Works, India was the next greatest supplier of pig iron in June, providing 10,775 tons.

Imports of steel bars showed an increase in June over May, the respective totals being 14,902 tons, and 12,386 tons. Of the June imports of steel bars 7407 tons came from Belgium, 3671 tons from Germany, 2202 tons from Sweden, and 1311 tons from France. Imports of cast iron pipe in June amounted to 7818 tons, of which 6140 tons came from France, 916 tons from Belgium, and 762 tons from Germany. Imports of structural steel increased to 14,011 tons as against 9291 tons in May. Of the June imports of structural shapes, 9649 tons came from Belgium and 3690 tons

Imports of Iron and Steel Into the United States  
(In Gross Tons)

	June		Twelve Months Ended June		May, 1926	First Six Months	
	1926	1925	1926	1925	1926	1926	1925
Pig iron .....	43,106	35,657	528,305	325,199	57,211	318,160	230,166
Ferromanganese* .....	4,023	4,023	57,041	69,719	2,027	22,991	41,419
Ferrosilicon .....	1,254	236	7,065	7,572	975	5,292	2,782
Scrap .....	10,354	7,290	82,818	87,454	1,939	32,097	50,268
Pig iron, ferroalloys and scrap.....	58,737	47,206	675,229	489,944	62,152	378,540	324,635
Steel ingots, blooms, billets and slabs...	5,111	2,506	28,337	34,796	5,377	18,972	17,760
Iron blooms, slabs, etc.....	.....	.....	779	.....	.....	42	13
Wire rods .....	743	897	8,471	6,673	701	4,888	4,406
Semi-finished steel .....	5,854	3,403	37,587	41,469	6,078	23,902	22,179
Rails and splice bars.....	13,961	6,669	45,844	46,495	1,803	32,182	25,007
Structural shapes .....	14,011	11,350	82,740	67,170	9,291	47,821	42,374
Boiler and other plates.....	1,147	16	3,776	795	881	3,074	116
Sheets and saw plates.....	748	192	4,879	3,583	593	3,312	2,096
Steel bars .....	14,902	6,381	86,035	28,307	12,386	55,539	28,315
Bar iron .....	558	365	6,933	9,844	237	3,047	7,852
Hoops, bands and cotton ties.....	1,547	.....	15,706	.....	3,973	10,890	6,012
Tubular products (wrought)†.....	1,367	5,301	30,190	46,173	1,847	11,532	5,844
Nails, tacks, staples.....	675	285	4,200	835	380	1,917	602
Tin plate .....	548	20	2,199	348	15	1,943	127
Bolts, nuts, rivets and washers.....	14	2	293	117	19	239	51
Round iron and steel wire.....	258	502	4,115	3,229	182	1,979	1,920
Barbed wire .....	92	.....	5,975	.....	166	2,142	2,207
Flat wire; strip steel.....	1,093	160	3,303	1,953	131	2,191	1,078
Steel telegraph and telephone wire.....	37	.....	252	.....	.....	119	377
Wire rope and strand.....	317	138	1,869	6,201	259	1,186	580
Other wire .....	34	.....	1,455	.....	331	1,048	167
Wire cloth and screening.....	34	.....	416	.....	49	196	108
Rolled and finished steel†.....	51,443	31,381	300,198	215,050	52,543	180,357	125,133
Cast iron pipe.....	7,818	.....	65,128	.....	7,775	28,800	15,978
Castings and forgings.....	362	340	2,656	2,930	183	1,369	1,688
Horseshoes .....	1	.....	1	.....	.....	1	86
Total .....	124,215	82,330	1,080,781	749,393	108,731	612,969	489,699
Manganese ore* .....	31,315	17,020	388,407	186,939	21,633	204,742	110,594
Iron ore .....	272,449	183,198	2,380,260	2,189,308	238,678	1,252,484	1,062,911
Magnetite (dead burned).....	1,714	10,628	63,251	63,129	8,598	46,598	45,050

\*Manganese content only.

†Prior to January, 1926, this includes some cast iron pipe, under the heading "tubular products."



## Imports of Iron and Steel in Gross Tons

	Total Imports	Pig Iron	Ferro-alloys	Manganese Ore and Oxide*
Calendar year 1924....	556,814	209,109	59,910	255,157
January, 1925 .....	77,105	41,344	7,165	15,498
February .....	92,353	47,803	10,997	9,666
March .....	92,115	50,803	5,691	24,330
April .....	71,233	33,299	7,699	14,941
May .....	67,789	21,260	8,721	29,139
June .....	82,853	35,657	4,259	20,720
Fiscal year 1925.....	749,393	325,199	77,291	186,939
July .....	64,642	24,881	3,601	28,586
August .....	68,489	30,707	3,526	34,168
September .....	68,445	29,917	3,594	22,709
October .....	80,045	37,709	11,226	23,054
November .....	79,771	34,712	6,173	33,238
December .....	98,400	53,333	7,703	36,908
Calendar year 1925....	943,240	441,425	80,269	265,688
January, 1926 .....	79,067	48,425	3,055	37,498
February .....	100,273	59,122	5,194	27,239
March .....	93,107	54,825	4,606	27,391
April .....	107,636	54,359	6,949	59,666
May .....	108,731	57,211	3,002	21,633
June .....	124,215	43,106	5,277	31,315
Fiscal year 1926.....	1,080,781	528,305	64,106	388,407

\*Not included in "total imports." These figures are for manganese contents of the ore.

## United States Imports of Pig Iron by Countries of Shipment

	June (In Gross Tons)		May	6 Mo.
	1926	1925	1926	1926
British India .....	10,775	20,520	11,848	66,298
Netherlands .....	8,250	2,395	4,750	44,434
Germany .....	15,535	7,900	21,419	89,647
United Kingdom .....	8,275	3,546	12,236	80,071
Canada .....	91	35	296	3,018
Belgium .....	5	1,081	1,100	5,648
France .....	.....	.....	5,478	25,033
Other Countries .....	175	180	54	2,897
Total .....	43,106	35,657	57,211	316,046

Sources of American Imports of Iron Ore  
(In Gross Tons)

	June		Twelve Months Ended June	
	1926	1925	1926	1925
Chile .....	110,300	71,000	1,287,700	1,135,175
Cuba .....	33,500	45,000	92,700	897,816
Spain .....	27,250	16,938	118,112	142,065
Sweden .....	7,870	13,905	120,665	270,453
French Africa .....	89,729	29,250	232,281	209,689
Canada .....	885	1,276	17,347	6,456
Other Countries .....	2,865	5,829	97,044	27,654
Total .....	272,449	149,958	2,380,261	2,189,308

from Germany. There was a gain in rail imports in June over May; the respective totals were 13,961 tons and 1803 tons. Of the rail imports in June, Belgium provided 7034 tons, and Germany 5371 tons.

June imports of manganese ore amounted to 31,315 tons, of which 15,698 tons came from Soviet Russia in Europe; 10,072 from Brazil; 2799 tons from West Africa, and 2719 tons from British India.

## British Mill Operations Improving

Semi-Finished Users Press Continental Makers for Delivery—Pig Iron Advances Further—Welsh Mills Operate at About 35 Per Cent

(By Cable)

LONDON, ENGLAND, July 26.

PIG iron continues strong, with Cleveland advanced another 2s. 6d. per ton, making a total advance of 20s. per ton since May 1. Stocks are negligible and no new supplies will be available before August. Demand is consequently restricted. Hematite is quiet but values are firmer as a result of decreasing supplies. Foreign ore continues quiet and Bilbao Rubio prices are nominal.

The steel outlook is improving, with increased quantities of foreign coal arriving and more works resuming operation this week on a considerable number of specifications accumulated since the beginning of the coal strike sufficient to keep them well occupied for several weeks.

British consumers of Continental semi-finished are pressing for immediate delivery, but supplies are practically unobtainable from European mills except for forward shipment. The market is otherwise quiet.

British and Continental European prices per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at \$4.86 per £ as follows:

Durham coke, del'd..	£0 18½s.		\$4.50	
Bilbao Rubio ore†...	1 1 to £1 1¼s.		5.10 to	\$5.16
Cleveland No. 1 fdy..	4 12½ and 4 13*		22.48 and	22.60*
Cleveland No. 3 fdy..	4 10 and 4 10½*		21.87 and	22.00*
Cleveland No. 4 fdy..	4 9 and 4 9½*		21.63 and	21.75*
Cleveland No. 4 forge	4 8½ and 4 9*		21.50 and	21.63*
Cleveland basic (nom.) .....	3 15 and 3 15½*		18.23 and	18.35*
East Coast mixed....	4 1 and 4 2*		19.68 and	19.93*
East Coast hematite..	3 16 to 3 16½		18.46 to	18.58
Ferromanganese .....	15 0		72.90	
*Ferromanganese .....	14 0		68.04	
Rails, 60 lb. and up..	6 15 to 7 5		32.80 to	35.24
Billets .....	6 10 to 8 0		31.59 to	38.88
Sheet and tin plate bars, Welsh .....	6 5		30.38	
Tin plates, base box..	1 0¼ to 1 6		4.92 to	6.34
Black sheets, Japanese specifications .....	13 10 to 14 0		65.60 to	68.04
Ship plates .....	7 5 to 7 15		1.57 to	1.68
Boiler plates .....	9 5 to 11 0		2.00 to	2.39
Tees .....	7 10 to 8 0		1.62 to	1.73
Channels .....	6 15 to 7 5		1.46 to	1.57
Beams .....	6 10 to 7 0		1.41 to	1.51
Round bars, ¾ to 3 in.	7 12½ to 8 2½		1.65 to	1.77
Steel hoops .....	10 10 and 11 0*		2.28 and	2.39*
Black sheets, 24 gage	11 0 to 11 5		2.39 to	2.44
Galv. sheets, 24 gage.	16 10		3.58	
Cold rolled steel strip, 20 gage .....	18 0		3.91	

\*Export price.

†Ex-ship, Tees, nominal.

## Continental Prices, All F.O.B. Channel Ports

Foundry pig iron:(a)				
Belgium .....	£3 6s.	to £3 7s.	\$16.03 to	\$16.28
France .....	3 6	to 3 7	16.03 to	16.28
Luxemburg .....	3 6	to 3 7	16.03 to	16.28
Basic pig iron:(a)				
Belgium .....	2 16	to 2 17	13.60 to	13.85
France .....	2 16	to 2 17	13.60 to	13.85
Luxemburg .....	2 16	to 2 17	13.60 to	13.85
Coke .....	0 18		4.37	
Billets:				
Belgium .....	4 7	to 4 9	21.14 to	21.63
France .....	4 7	to 4 9	21.14 to	21.63
Merchant bars:				
Belgium .....	4 13	to 4 15	1.03 to	1.04
Luxemburg .....	4 13	to 4 15	1.03 to	1.04
France .....	4 13	to 4 15	1.03 to	1.04
Joists (beams):				
Belgium .....	4 12	to 4 14	1.01 to	1.03
Luxemburg .....	4 12	to 4 14	1.01 to	1.03
France .....	4 12	to 4 14	1.01 to	1.03
Angles:				
Belgium .....	5 2	to 5 4	1.12 to	1.15
½-in. plates:				
Belgium .....	5 7½	to 5 10	1.19 to	1.21
Germany .....	5 7½	to 5 10	1.19 to	1.21
¾-in. ship plates:				
Belgium .....	5 1	to 5 3	1.11 to	1.13
Luxemburg .....	5 1	to 5 3	1.11 to	1.13
Sheets, heavy:				
Belgium .....	6 3	to 6 4	1.35 to	1.37
Germany .....	6 3	to 6 4	1.35 to	1.37

(a) Nominal.

Tin plate is dull, consumers hesitating to pay the current rates, although in need of material. More mills are using foreign coal and sheet bars and additional mills are resuming today. Probably between 35 and 40 per cent of the Welsh trade is now working. Any general suspension for the usual August inventory week is improbable. Galvanized sheets are quiet and steady. Black sheets are inactive.

### German Machinery Industries Show Improvement

The German machinery industries have shown an improvement as regards domestic sales and exports in the first half of 1926, according to a report to the Department of Commerce from Trade Commissioner Theodore Pilger, Berlin. Exports of German machinery have increased since January, 1925, although there were small setbacks in February, May, July and December of last year, and April of this year. Statistics covering the first four months of 1926 show that the volume this year is well above that for 1925. If the tonnage of German machinery exports during the early months of 1926 is considered, the volume has not yet reached the pre-war level, but is 80 per cent greater than in 1923, which was the low point for German export trade immediately following the time when the mark was stabilized.

Many German manufacturing plants have been forced by circumstances to abandon old products and completely change to other lines. Companies formerly building railroad cars are now trying to build steel office furniture; others formerly building machine tools are trying to develop a line of farm tractors. This situation is forcing a readjustment in the overhead organization of most German manufacturers. German industry, according to this report, is working at only 65 per cent of productive capacity in spite of the increase in export shipments.

### Foundry Equipment Sales Decline

Sales reported by 13 members of the Foundry Equipment Manufacturers' Association in June totaled \$407,940, as compared with \$425,638 reported by 10 companies in May. June sales, however, were 18 per cent greater than in the same month of 1925, when they totaled \$343,259. Total sales for the first six months of 1926 were \$2,638,149, as compared with \$2,156,630 in the same period a year ago, a gain of 22 per cent.

Shipments of 12 companies in June totaled \$417,632, as compared with \$415,082 reported by 10 companies in May. June shipments, moreover, were 28 per cent heavier than in June, 1925, when they were \$324,434. Shipments for the first half of this year totaled \$2,628,244, as compared with \$2,010,288 for the same period in 1925, a gain of 30 per cent.

### Fabricated Plate Bookings Recede

June bookings of fabricated steel plates, reported by the Department of Commerce, totaled 37,401 tons, or 55 per cent of capacity, as compared with 46,473 tons, or 68 per cent of capacity, for May, and 34,402 tons, or 51 per cent, in June, 1925. Sales of oil storage tanks declined from 15,728 tons in May to 7779 tons. Bookings of gas holders, however, showed an increase from 4190 tons in May to 8282 tons in June. Sales of all other classes of work showed recessions.

### Wallingford Closes Chicago Office

Walter-Wallingford & Co., Cincinnati, dealers in pig iron, coke and alloys, recently closed their Chicago office and for the present will handle their business in the Lake region from Cincinnati. The Wallingford company advises that it has not turned over all of its agency contracts to a new Chicago firm, as recently reported.

## MANY FOREIGN CONTRACTS

### Engineering Companies Interested Abroad—Importers Active—Japan Buys 5500 Tons of Shapes

NEW YORK, July 27.—Export of iron and steel continues on a small scale, but importers of European material report but little decline in the volume of their business. Most of the current business in imported steel is apparently confined to small lots of reinforcing bars and structural material, with occasional purchases of steel hoops.

A number of foreign contracts involving tonnages of steel are being quoted on by American contractors and in several instances quotations for furnishing European material are being accepted. The contract for piers and docks at Buenaventura, Colombia, involving about 3000 tons of reinforcing bars has not yet been awarded. Reports that the contract for a railroad from Tolima, Colombia, to a port, about 150 miles, had been let to a Spanish bidder and that a loan was being negotiated in Spain are not confirmed, and the contract apparently is still open. The Ulen Contracting Co., New York, which has contracts for sanitary and water supply construction in Poland aggregating about \$10,000,000 is negotiating for an additional \$6,000,000 of local municipal contracts in Poland.

Export orders for small lots of tin plate continue to be placed in this country but in practically all cases deliveries are extended to late September or October and a recent advance in the export quotation of the leading interest and certain independents has placed the export price of tin plate on a higher level. The range today, delivered Japan, is \$5.75 to \$6 per base box. These prices, added to the rather extended deliveries offered, are resulting in only small lot purchases, buyers evidently preferring to await, if possible, the settlement of the British strike.

Of the recent railroad business in the market from Japan, the 1800 tons of rails for Osaka municipality, 6½ miles of 91-lb. high T-rails and 5½ miles of grooved and guard rails, was awarded to a large Japanese export house in New York and placed with the leading interest. In addition to this about 1400 tons of 60-lb. sections are understood to have been placed with a large mill in the United States by a privately owned railroad in Japan. The 350,000 ft. of gas pipe for the Imperial Government Railways in Japan was distributed among two Japanese exporters in New York and a syndicate in Japan, which maintains stocks. About 200,000 ft. of the larger sizes went to one exporter, a smaller order for the sizes less than ½-in. to another in New York and the remaining tonnage to the Japanese syndicate. Among current inquiries from Japan is 100 tons of electrical sheets for the Shibaura Engineering Co.

One of the sizable purchases of the past week was the 5500 tons of structural steel for the new Mitsui Bank Building in Tokio, which was awarded by Mitsui & Co. to the leading interest. The material will be fabricated in this country. James Stewart & Co., New York, are the contractors.

One of the two 600-ft. boats that are being built by the American Shipbuilding Co. for the Interlake Steamship Co., Cleveland, which operates the fleet of Pickands, Mather & Co., will be named in honor of William McLauchlan, one of the oldest and most popular men in the lake shipping business. Mr. McLauchlan started in the ore trade in 1873 with Samuel L. Mather, father of Samuel Mather, then head of the Cleveland Iron Mining Co. Ten years later he joined Col. James Pickands and Samuel Mather, who at the time were organizing Pickands, Mather & Co. He remained with this firm for 35 years and retired from it as a partner in 1918. The second interlake freighter will be named for Robert Hobson, who was president of the Steel Co. of Canada, Hamilton, Ont. Mr. Hobson died last February.



## MERGE ALLOY COMPANIES

### United Alloy Steel Corporation and Central Steel Co. Combined into Central Alloy Steel Corporation

A merger of the United Alloy Steel Corporation, Canton, Ohio, and the Central Steel Co., Massillon, Ohio, was approved at a meeting of the directors of the two companies held in Massillon, July 22. The new organization will be known as the Central Alloy Steel Corporation, and its officers, with one exception, will be composed of the present officers of the Central Steel Co. The Mather interests, which have been extensive in both companies, apparently will be predominant in the new organization.

Under the terms of the merger Central Steel Co. common stock will be exchanged on the basis of two and one-eighth shares of new stock for one share of Central common. Stockholders of the United Alloy company will retain their present stock. In the reorganization the present capital stock of the United Alloy company will be increased to 1,320,136 shares to take care of the Central stockholders. It is believed that this merger is only the first step in a larger combination of steel plants in northern Ohio, and that other plants will be eventually added to the United-Central company or merged into a separate unit.

Officers of the Central Steel Co. who will retain the same official positions in the combined company are F. J. Griffiths, chairman of the board; C. E. Stuart, president and treasurer; B. F. Fairless, vice-president and general manager; J. H. Schlendorf, vice-president in charge of sales. The only present officer of the United Alloy company in the new line-up is Charles W. Kreig, one of the vice-presidents and secretary and treasurer. He becomes secretary of the new organization. The new board of directors has not yet been chosen.

The new company will have an annual ingot capacity of 1,400,000 tons, of which 780,000 tons will be alloy steel. The ingot capacity of the United Alloy company is 1,000,000 and of the Central Steel Co., 400,000 tons. The new company, it is estimated, will have about 80 per cent of the alloy steel capacity of the United States.

Negotiations for the merger were started last fall by leading iron and steel and banking interests in Cleveland, but failed of consummation. Before they were renewed a few weeks ago changes had occurred in both organizations through the purchase of the large holdings of E. A. Langenbach in the United Alloy Steel Corporation and the death last January of Richard E. Bebb, chairman of the Central Steel Co. Mr. Langenbach's stock was acquired by Cleveland interests headed by Cyrus S. Eaton, of Otis & Co., investment bankers. The same group had a few months previously refinanced the Trumbull Steel Co., Warren, Ohio. Harry Coulby, member of the Pickands, Mather & Co., Cleveland, succeeded Mr. Langenbach as chairman of the United board, and he, with Cyrus S. Eaton and J. O. Eaton, the latter also of Otis & Co., formed the executive committee. Previous to the sale of Mr. Langenbach's stock, Pickands, Mather & Co., of which Samuel Mather is the head, had large interests in the United Alloy company.

For several years the Cleveland-Cliffs Iron Co. interests have had a large stock ownership in the Central Steel Co. W. G. Mather, a brother of Samuel Mather, who is president of the Cleveland-Cliffs Iron Co., is a director of the Central Steel Co. and is credited with having had an important part in bringing about the consolidation. S. L. Mather, secretary of the Cleveland-Cliffs Iron Co., is also a director of the Central Steel Co. W. G. Mather and the Cleveland-Cliffs Iron Co. are heavily interested in the Otis Steel Co., Cleveland, and the Trumbull Steel Co., Warren, Ohio, which are being mentioned in connection with a still larger merger.

The consolidated company, according to a statement issued by Otis & Co., had on Dec. 1, last, assets in excess of \$80,000,000, and the combined net earnings after Federal taxes exceeded \$6,500,000, which after pre-

ferred dividends would be more than \$4.36 a share on the common stock outstanding. The total assets of the United Alloy company amount to \$42,616,122, while those of the Central company are \$38,362,000. The United Alloy company has 800,000 shares of no par stock carried on the books at \$4,000,000, and \$3,300,000 in 7 per cent cumulative preferred stock, with no bonds. The Central company's capital stock consists of 244,806 shares of no par common, carried on the books at \$1,224,032; 61,893 shares of 8 per cent preferred stock and \$4,523,500 in 8 per cent 20-year mortgage bonds due in 1941. The United Alloy company reported a surplus of \$29,998,180 at the close of 1925 and the Central company a surplus of \$18,554,000. Net profits of the United Alloy company were \$3,128,985 in 1925, and the Central company's net profits last year were \$3,374,094.

The new company, on the basis of assets at the end of 1925, will have \$31,376,467 in current assets and \$4,087,736 in current liabilities, leaving net working capital of \$27,288,731. Fixed assets in plant and property amount to \$43,663,739. Combined annual charges on account of bonds and preferred stock are \$1,086,476, leaving on the basis of 1925 earnings over \$5,400,000 to apply on the new common stock.

The United Alloy Steel Corporation is a pioneer in its field. Its plant was started in 1904, and the present company was incorporated in 1916 to acquire the plant of the United Steel Co. In 1921 the company absorbed the Berger Mfg. Co. and the United Furnace Co., and in 1922 purchased the Canton Sheet Steel Co. The Central Steel Co. was incorporated in 1914, and in 1921 absorbed the Massillon Rolling Mill Co. and the National Pressed Steel Co. The company owns the Canton Furnace Co., which has about completed a blast furnace and a by-product coke plant. With the growth of the automobile industry and the heavier demand for alloy steels, both companies have expanded materially since they started the manufacture of alloy steels.

In addition to making alloy steel in various forms, other finished products made by the United and Central plants include black, automobile body and electric sheets. The United company also makes carbon steel bars and blue annealed sheets, and the Central Steel Co. produces hot-rolled strip steel.

The following table shows the producing plants of the two companies:

	United Alloy Steel Corporation	Central Steel Co.
Blast furnaces .....	1	1
By-product coke ovens.....	49	49
Open-hearth furnaces .....	18	9
Electric furnaces .....	3	—
Blooming mills .....	2	1
Sheet bar mills.....	2	1
Bar mills .....	5	3
Sheet mills .....	41	14
Hot strip mill.....	—	1

F. J. Griffiths, chairman of the combined company, has announced that no radical changes will be made and that efforts will be directed toward cementing an organization unexcelled in the steel industry.

F. J. Griffiths, chairman of the board, and C. E. Stuart, president and treasurer, of the Central Alloy Steel Corporation, have grown up with the alloy steel industry. Mr. Griffiths came to America from England when 14 years of age. He completed a high school education in the Cleveland public schools and at sixteen secured employment in the chemical laboratory in the Newburgh Works of the American Steel & Wire Co. From there he went to the Portsmouth Steel Co., Portsmouth, Ohio, where he had charge of the open-hearth and laboratory. His next position was as assistant superintendent of the United Alloy plant in Canton. The success this company attained in the development of alloy steel for use in the automotive industry was attributed largely to Mr. Griffiths. When the Central Steel Co. was organized in 1914 he went with that company as general superintendent. Later he became vice-president and general manager and in 1921 was chosen president. Last January he succeeded the late R. E. Bebb as chairman.

Mr. Stuart was one of the organizers of the Central Steel Co. and on its incorporation was elected secretary and treasurer. Later he became vice-president and this year succeeded Mr. Griffiths as president. His first employment was as an office boy in the office of a



Buffalo, N. Y., newspaper, where he learned his first lesson in sales and advertising. As a sales promoter he became interested in the steel industry and later was placed in charge of the sales department of the Dubois Iron Works, Dubois, Pa. Later he became affiliated with the Canton Sheet Metal Co., Canton, Ohio, and left that company to become affiliated with the Central Steel Co.

B. F. Fairless, who will be general manager of both the Canton and Massillon plants, has worked his way up from a position as civil engineer, which he took with the Central Steel Co. in 1914. He graduated from Ohio State University and taught school before going to the Central Steel Co.

After the agreement on the merger, George H. Charls, president of the United Alloy Steel Corporation, tendered his resignation and will have no connection with the new organization. Further than taking some time for rest, he has made no plans for the future.

### C. F. A. Railroads Seek to Increase Minimum Carload on Pipe

WASHINGTON, July 27.—Railroads in Central Freight Association, in explaining proposed tariffs to increase the carload minimum weight on wrought iron pipe, rough tubing and seamless tubing, from 36,000 to 46,000 lb., declared that the larger shippers average a loading of 82,000 lb. for each car and therefore would not be handicapped by the proposed higher minimum. The tariffs were filed to become effective Aug. 1, and would restore the minimum that prevailed prior to Sept. 20, 1924. The schedules have been the object of a number of protests from pipe and tube manufacturers and jobbers, as pointed out in THE IRON AGE of July 15, page 161.

### Elliott Co. Acquires Ridgway Dynamo & Engine Co.

The Elliott Co., Pittsburgh, now operating plants at Jeannette, Pa., Springfield, Ohio, and Wellsville, N. Y., has purchased the plant of the Ridgway Dynamo & Engine Co., Ridgway, Pa., together with its good will and other assets. The Ridgway Dynamo & Engine Co. has been successfully engaged in the manufacture of steam and electrical machinery for more than 30 years. The new management will make improvements at the Ridgway plant.

With the addition of the Ridgway products, the Elliott Co. has a complete line of power equipment, including steam turbines and generators, several different types of engines, all types of condensers, feed water heaters, air ejectors, deaerators, motors, and electrical machinery, as well as smaller items such as strainers, filters, valves, and boiler tube cleaners.

### Automobile Production in June

WASHINGTON, July 27.—Production of motor vehicles in the United States in June, according to the Department of Commerce, totaled 383,575. Of this total 333,542 were passenger cars and 44,033 were trucks. The output in May totaled 420,978 vehicles, of which 373,140 were passenger cars and 47,838 were trucks. The total for the six months was 2,070,390 passenger cars and 254,387 trucks, against 1,866,131 passenger cars and 229,114 trucks in the first six months of 1925.

### Structural Steel Sales Maintained

Bookings of fabricated structural steel in June, reported by the Department of Commerce, show a computed total of 228,750 tons, or 75 per cent of capacity, as compared with 231,800 tons, or 76 per cent of capacity, in May. Computed bookings in June, 1925, were 262,300 tons, or 86 per cent of capacity, and in June, 1924, amounted to 190,450 tons, or 65 per cent.

For the first six months of this year bookings totaled 1,250,500 tons, as compared with 1,262,700 tons

in the first half of 1925, and 1,189,580 tons in the same period of 1924.

Shipments of fabricated structural steel in June represented 88 per cent of capacity, as against 78 per cent in May and 77 per cent in June, 1925. For the first half of this year shipments totaled 1,399,950 tons, as compared with 1,284,050 tons in the same period of 1925.

### Rockaway Rolling Mill to Be Operated Again

The Rockaway Steel & Iron Co. has been incorporated with capital of 1000 shares of stock of no par value and has purchased the plant at Rockaway, N. J., recently used by the International High Speed Steel Co. Before being acquired by the International High Speed Steel Co., this plant was known as the Rockaway Rolling Mill and the interests which owned that mill are prominent in the newly organized Rockaway Steel & Iron Co. Edward Ehlers is president of the new company, which will make a specialty of bedstead angles, cross-arm braces and reinforcing bars, together with merchant bars made solely from old steel rails. Slight alterations will be made in the plant and equipment and new rolls have been purchased. The special equipment used by the International High Speed Steel Co. for the manufacture of tool steel and hollow drill steel will be sold.

### Department of Commerce Year Book Available

WASHINGTON, July 27.—The Department of Commerce, has just issued its Commerce Year Book for 1925. It is the fourth issue of the kind and consists of statistical information taken from trade journals, trade associations, Government bureaus and other sources, and reviews industrial conditions of last year. The section on iron and steel consists of 20 pages, while the non-ferrous section consists of approximately 17 pages, and the machinery section of 22 pages.

### Republic Steel Resumes Dividends on Common Stock

Republic Iron & Steel Co. last week declared a quarterly dividend of \$1 a share on its common stock, the first declared on this stock since 1921. At the same time net gain from operations for the second quarter of 1926 was announced as \$1,932,653 after a deduction for maintenance and repairs of plants amounting to \$1,027,477, and a provision for Federal tax had been made. Net profit after provision for depreciation and renewal of plants and exhaustion of minerals amounted to \$1,413,429. After interest on bonds and notes there remained, applicable to dividends, \$1,121,436, as compared with \$1,321,846 for the preceding quarter, and \$1,167,050 for the same quarter in 1925. A preferred dividend of 1½ per cent was paid, leaving a surplus for the quarter of \$638,936. Unfilled orders on hand June 30 amounted to 122,944 tons, as compared with 151,827 at the end of March and 102,320 tons on June 30, 1925.

### Youngstown Sheet & Tube Shows Gain for Second Quarter

Net profits of the Youngstown Sheet & Tube Co. for the second quarter of 1926 aggregated \$4,181,796, after deductions were made for depreciation, depletion, interest and Federal taxes. This compares with a net profit of \$3,804,837 for the preceding quarter, and \$3,424,855 for the second quarter of 1925.

The American Iron and Steel Institute will hold its next meeting at the Hotel Commodore, New York, on Friday, Oct. 22.

# Business Analysis and Forecast

BY DR. LEWIS H. HANEY

DIRECTOR, NEW YORK UNIVERSITY BUREAU OF BUSINESS RESEARCH

## Favorable and Unfavorable Factors Affecting Business May Be Summarized as Follows:

### Favorable Factors

1. Absence of serious industrial mal-adjustments.
2. Commodity prices more stable.
3. Good buying of steel; unfilled orders decline less rapidly.
4. Purchasing power of labor good.
5. Large volume of retail trade.
6. Mercantile inventories small.
7. Money fairly easy.

### Unfavorable Factors

1. The P-V Line declined slightly.
2. Continued decline in building activity, and automobile production.
3. Rising trend of business failures; new enterprises decline.
4. Bank statements show an undue proportion of assets in stocks and bonds.
5. Manufacturers' inventories large.
6. Unfavorable financial developments in Europe.
7. Radical political developments in the West.

**A** FAIRLY even balance between the favorable and the unfavorable factors explains the current uncertainty as to the future of business. No expansion would be normal under present conditions, but no drastic recession is called for. The probability is that a little further recession will occur.

**O**UR first chart is designed to show the current position in the business cycle. Just at present a fairly stable situation is indicated. This is especially true of railroad freight traffic which, allowing for seasonal variation, has held rather steadily for several months with little expansion or contraction. Thus our index is practically the same for December, 1925, and March and June this year. The trend of the railroad tonnage curve may reasonably be said to show an irregular sidewise movement.

This is a pretty good picture of industry as a whole. There has been a remarkably sustained period of large industrial activity, fully up to normal requirements of the country. While no very sharp curtailment is indicated for the near future, it is equally true that there is no prospect of any material expansion or boom.

The curve of bank debits reflects buying and selling

as distinguished from industrial output, and is affected by price levels. It differs from the railroad traffic curve in showing a continuous and rather sharp decline since March. The June index was nearly as low as that for September last year, and was within speaking distance of the freight traffic curve for the first time in several months. This decline marks the deflation in speculation which has gone on in recent months—in the stock market (March and April) and in real estate (from early spring to date). It has been accentuated by the decline in commodity prices.

The fact that bank debits are now in so much closer adjustment with an index of physical volume may be considered favorable to stabilization, as an extraordinarily large volume of checks drawn in comparison with industrial output almost necessarily means undue speculative activity. The bank debits curve, however,

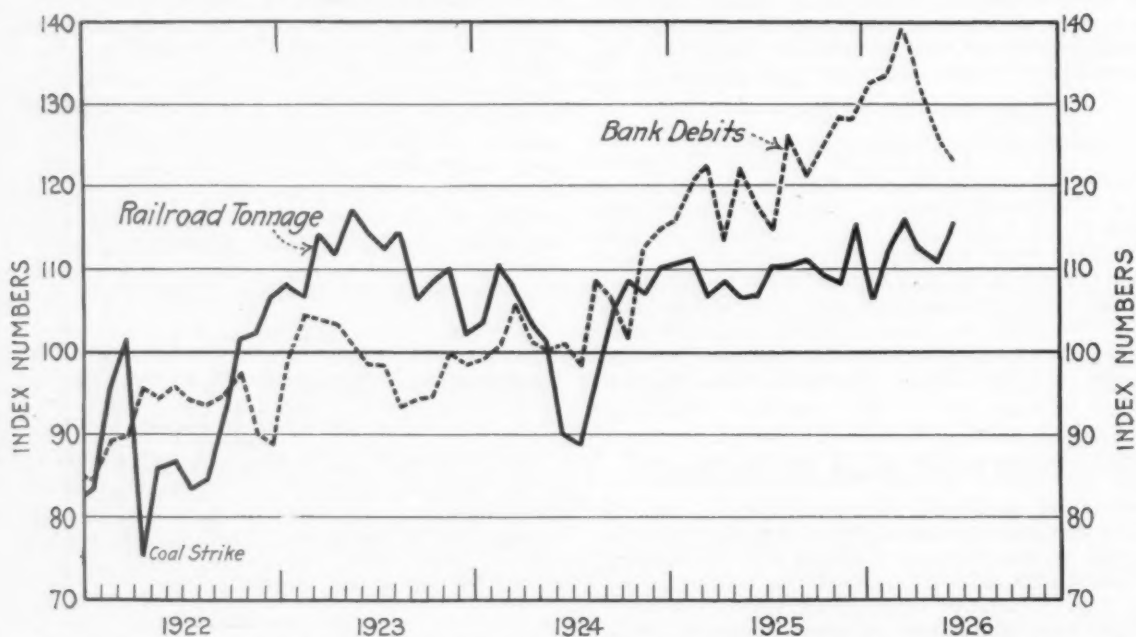


Fig. 1—The Adjusted Index of Railroad Tonnage Shows a Fairly Stable Condition. Bank debits are in closer adjustment with the index of physical volume of trade, indicated by the freight movements, and show a deflation of stock and real estate speculation

# In This Issue

*No evidence of over-production in basic industries, says Dr. Haney.*—Output is not clearly in excess of the movement of goods through trade channels.—Page 297.

*Bethlehem first aid teams win \$4,000 in cash prizes.*—Contest held by steel company not only encourages but rewards proficiency in first aid work.—Page 277.

*High school boys learn the foundry trade.*—Indianapolis has a vocational foundry, in which the students make many of the castings required for public school purposes.—Page 279.

*Japan is steadily increasing its finished sheet-making capacity.*—Nippon is buying less finished steel and more of the raw and semi-finished materials, making the finished product herself.—Page 276.

*More than two million motor cars were made in the first half of 1926.*—Total number of cars and trucks produced was 2,324,777. June output was only 9 per cent under May.—Page 293.

*America exported two tons of iron and steel for every ton imported.*—In the 12 months ended in June American manufacturers consumed over one million tons of foreign iron and steel, 33 per cent over the last period. But American iron and steel mills sold close to two million tons abroad (including Canada), a gain of 18 per cent over the previous period.—Page 288.

*The P-V Line points upward.*—Dr. Haney's index forecasts improvement in business. The decline in volume of bank credits, bringing them into closer relation with the volume of commodities, is favorable to business stabilization.—Page 294.

*What Europe overlooks in accusing America of ungenerous treatment of war debts.*—A considerable part of the foreign obligations to United States consists of money borrowed after the war, much of which was used unwisely and to further selfish ambitions.—Page 300.

*Make drastic cut in number of shovel sizes manufactured.*—But the 43 per cent eliminated represented only 7½ per cent of the 9.6 million shovels made annually.—Page 273.

*Galvanized pipe is in increasing favor.*—While the 1925 output was more than double the 1913 production, black pipe increased only 49 per cent.—Page 300.

*Foreign coal is aiding British steel mills to overcome the strike handicap.*—The rate of mill operations is increasing and the steel outlook is improving.—Page 290.

*About four-fifths of America's alloy steel capacity is now controlled by one company.*—The merger of the United Alloy Steel Corporation and the Central Steel Co. places the newly-formed Central Alloy Steel Corporation in a commandnig position.—Page 292.

*American foundries are steadily using more foreign iron.*—Imports for the first half of 1926 were 38 per cent above the same period of last year.—Page 289.

*Demand for alloy steel castings is gradually expanding.*—The output was 112,583 in 1925, a new record and 12 per cent above the previous record year, 1923.—Page 301.

*Trade statistics in tabloid.*—Sheet sales for the first half of 1926 exceeded the same period of 1925 by 5 per cent—Page 281. June sales of commercial steel castings were 14 per cent under May.—Page 285. June structural steel bookings were only 1.2 per cent under May.—Page 293. The malleable foundries reporting to Washington sold 45,548 tons in June, a loss of 3631 tons from May.—Page 303.

*Steel companies report high seasonal profits.*—The Steel Corporation's earnings on common for first half are more than \$2 higher than in same period of 1925.—Page 315. Republic Steel declares first dividend on common stock since 1921.—Page 293. Bethlehem and Youngstown Sheet & Tube in strong financial position.—Pages 298 and 293.



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## Helping the Industrial Equipment Salesman

**F**OR some weeks verified reports of new industrial companies have been merged in the department headed "Machinery Markets and News of the Works." Formerly they were grouped separately, as were also the news items of changes in offices and personnel.

The machinery market section is of use chiefly as a source of leads for selling machinery, equipment and supplies, and it therefore seemed proper to put into the one section all the information serving to that end. It devolves on one individual to follow the specific business opportunity, while it may be the task of someone else to keep lists and related notes up to date. The fact remains that in the sales office data must be under constant revision to secure highest efficiency in sales effort. Our help lies in brevity of statement, elimination of the unimportant, verification wherever possible and, now, a convenient broadening of scope.

*For News Summary See Reverse Side*

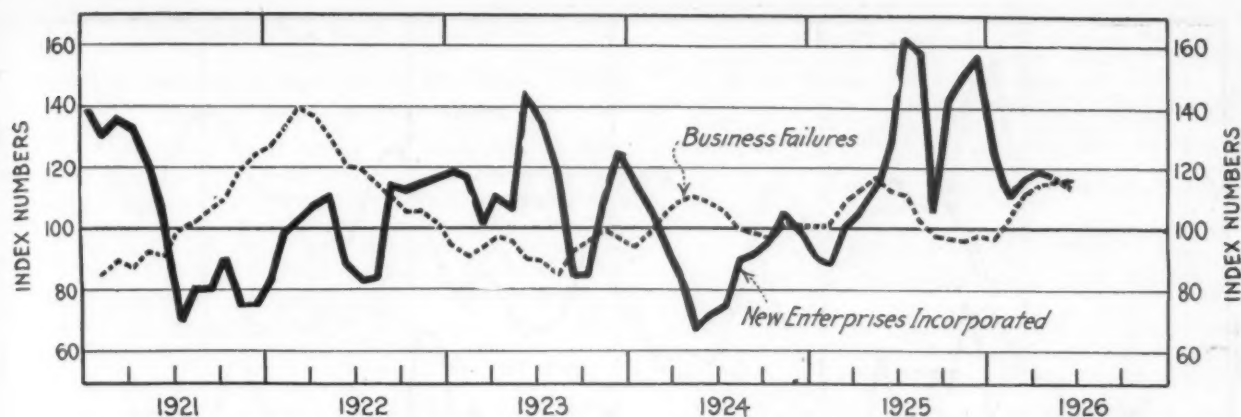


Fig. 2—Unfavorable Are the Increase in Business Failures and the Decline in Number of New Enterprises

declined less sharply in June than in the preceding months and the weekly figures for July thus far indicate the possibility of an upturn. We may yet see a double top in this index of business, similar to that in the stock market, though so much recovery in bank debits seems unlikely.

A study of these two important indexes shows that business in general is near the peak of a cycle and is neither moving up nor down, as yet, in any pronounced way. The situation is admittedly complex, depending as it does upon the crops, politics, foreign developments, and the trend of the automobile and building industries. Certainly the situation calls for great caution and conservatism, although, aside from the speculative readjustment referred to above, only a moderate recession has thus far occurred and no drastic further decline is yet in sight.

#### Double Tops in Trade Curves Indicated

IN a way, the basic production curve (see page 1795, June 24) resembles that of tonnage and the curves of trade are like that of bank debits. The retail trade curve has been relatively high in comparison with production in basic industries and is still above the latter in spite of some downward readjustment in the spring.

Apparently the curves of trade are making a double top. Both retail and wholesale trade reached a peak around November last year, the average for the three months, October, November and December being the highest of any similar period on record. Then there was a decline through February, followed by irregular recovery. At present both are below the November peak, but higher than a year ago or than the peak of business in 1923.

On the other hand, basic production reached its recent peak about March and has since been declining. It also is higher than it was a year ago, but is considerably under the peak reached in April, 1923.

Is basic production out of line with trade—just as

railroad tonnage has been out of line with bank debits? Judged by the level of wholesale trade, the answer would be, yes; judged by retail trade, the answer would be, no. Statistical measurements are not sufficiently accurate to allow a clear generalization. We can, however, say that the average output of all our basic industries is well up with the movement of goods through trade channels, but is not clearly in excess of such movement, as was the case in 1923 and again in the first quarter of 1925.

#### Close Balance Between Supply and Demand

WITH reference to the future we ordinarily rely heavily, although not exclusively, upon the trend of the P-V line barometer. This barometer of general business is still pointing downward, although very slightly. This condition reflects the fact that commodity prices have declined while the physical volume of trade has not increased, which is taken to indicate that the demand for goods has weakened. The very slight decline in the P-V line of late, however, suggests that for the present an equilibrium between demand and supply is nearly re-established. It may be doubted if there has been enough curtailment on the average to bring a thorough readjustment, and certainly there has not been enough to allow a sustained period of expansion.

Our adjusted index of ingot production held up in June and is now widely divergent from the P-V line. This is one of the several indications of similarity between present conditions and those that existed in 1923, when the divergence was even more pronounced.

The outcome in 1923 was a sharp decline in the ingot output between August and December. At that time about seven months elapsed between the downturn in the P-V line and any pronounced change in ingot production. Will a similar period elapse this year?

In the first five months of 1923 the activity of steel

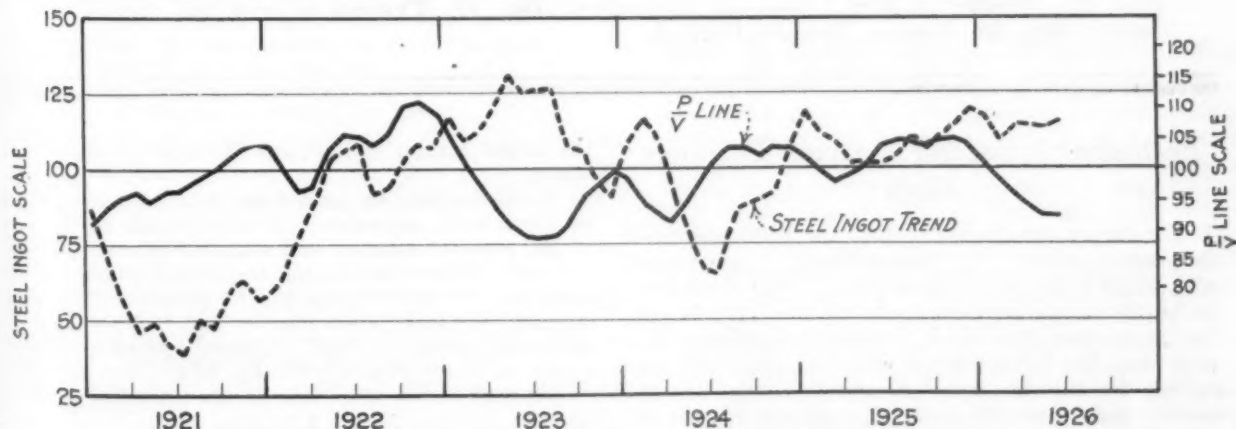


Fig. 3—The P-V Line, Representing the Ratio of Commodity Prices to the Physical Volume of Trade, Generally Anticipates the Trend of Business by About Five Months. It turned downward in December and has continued a steady drop until now it is well below normal. The ingot production index held up in June and conditions are similar to those existing early in 1923

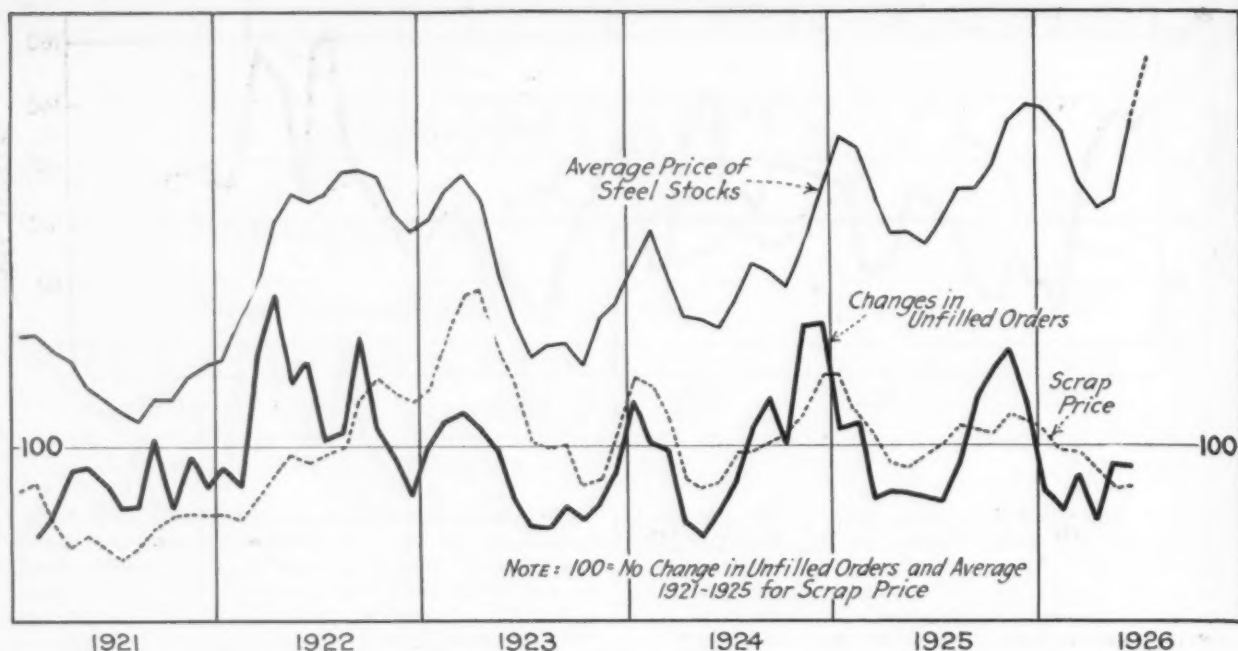


Fig. 4—Little Significance May Be Attached to the Recent Movements of the Curve Showing the Rate of Change in Unfilled Orders or the Curve of Scrap Prices. Neither forecast the sharp rise in stock prices

consuming industries was not quite so great as has been the case this year. In that period, too, the average price of finished steel was a good deal higher than it is now. Also ingot production was more out of line with normal requirements, and in fact general overproduction clearly existed. It might be argued, therefore, that conditions are now more favorable for maintaining a high level of steel output at present than was the case in 1923.

On the other hand, the long-time outlook for building activity is less favorable now than then, and the general activity in steel consuming industries has at last fallen below a normal relation with the ingot output. It, therefore, is likely that curtailment will be required within a month or two, but the possibility remains that such curtailment need not be drastic.

#### Curve of Steel Stock Prices Included

OUR fourth chart shows two important steel barometers together with the average monthly price of a group of steel stocks. The rate of change in unfilled steel orders, while considerably above the low point, shows no conclusive trend. The decline in June (over 170,000 tons) was considerably less than the decline in May, which is apparently favorable. But we must re-

member that on the average unfilled orders usually show a larger decrease in May than in the following month and, therefore, the smallness of the June decrease is not so significant as appears. It will require another month or two to give us conclusive evidence of the trend.

Scrap prices have until recently shown a rising trend, the June average being \$15.75 against \$15.69 in May. Here, again, the significance of the movement is uncertain, the advance not having been confirmed yet by industrial buying.

About the middle of July the average of a group of steel stocks on the New York Exchange reached a new high, after one of the sharpest upward movements on record. It will be noted that usually either the rate of change in unfilled orders or the movement of scrap prices (or both) anticipates the trend of steel stocks. Neither one of the barometers has thus far indicated so much recovery in steel stocks as has occurred, though they forecast the February decline as far in advance as December. In view of the small upturn in the barometers and their present irregularity, and considering the doubt as to the sustained character of their rise, it seems questionable that the upward trend in steel stocks is likely to go much further.

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*The schedule of the next installments of the Business Analysis and Forecast, by Dr. Lewis H. Haney, Director, New York University Bureau of Business Research, is as follows: Aug. 12—Activity in Steel Consuming Industries; Aug. 19—Position of Iron and Steel Producers; Aug. 26—General Business Outlook.*

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### Bethlehem's Second Quarter Earnings High

For the second quarter of 1926 the Bethlehem Steel Corporation reports an income of \$12,096,033, compared with \$11,973,038 in the preceding quarter, and with \$9,708,528 for the second quarter of 1925. Net income for the quarter after taxes, interest, depreciation, etc., were deducted totaled \$5,348,023, compared with \$5,865,850 for the first quarter, and \$3,423,191 for the quarter ended June 30, 1925. The surplus for the period after preferred dividends were paid amounts to \$3,675,303, equivalent to \$2.04 per share of common stock. The surplus for the first quarter of 1926 was \$4,177,055, providing \$2.32 per share, while that for

the second quarter of 1925 was \$2,347,400, or \$1.31 per share.

Unfilled orders on hand June 30, 1926, were valued at \$50,010,117, compared with \$59,390,375 at the end of the previous quarter, and with \$50,342,813 on June 30, 1925. Operations during the second quarter averaged 82.3 per cent of capacity, as compared with 87.2 per cent in the previous quarter and 67.1 per cent in the second quarter of 1925. Current operations are at a rate of 72 per cent of capacity, while they were but 56 per cent at the same time in the preceding year.

Rotary enameling furnaces are being installed in the Buffalo plant of the American Radiator Co. The Ferro Enamel Supply Co., Cleveland, is doing the work.



## FABRICATED STEEL

### Week's Awards Close to 29,000 Tons, With 35,000 Tons in New Projects

A New York hotel, calling for 4800 tons of steel, is the largest of the week's fabricated steel awards totaling close to 29,000 tons. New work on which bids are being taken totals 35,000 tons and includes two bridges over the Ohio River at Gallipolis, Ohio, and Weirton, W. Va., requiring a total of 11,400 tons. A Chicago bank will need 8000 tons. Awards follow:

BOSTON, 100 tons, Stone & Webster, Inc., office building alterations, to New England Structural Co.  
 BOSTON, 550 tons, Harvard Medical School dormitory, to New England Structural Co.  
 CAMBRIDGE, MASS., 182 tons, baseball cage, Harvard University, to Boston Bridge Works, Inc.  
 HARTFORD, CONN., 200 tons, Colonial Theater, to Lehigh Structural Steel Co.  
 PROVIDENCE, R. I., 1000 tons, Point Street bridge, to Boston Bridge Works, Inc.  
 NEW YORK, 4800 tons, Netherland Hotel at Fifth Avenue and Fifty-ninth Street, to Taylor-Fichter Steel Construction Co.  
 NEW YORK, 600 tons, loft building at 145 East Thirty-second Street, to Easton Structural Steel Co.  
 NEW YORK, 600 tons, apartment building at 433 East Fifty-seventh Street, to Easton Structural Steel Co.  
 NEW YORK, 250 tons, skip for East River power house of New York Edison Co., to Federal Shipbuilding Co.  
 NEW YORK, 920 tons, 15-story apartment, Park Avenue and Ninety-first Street, to A. E. Norton, Inc.  
 NEW YORK, 1400 tons, 15-story building, 16-20 East Fifty-second Street, to Bethlehem Fabricators, Inc.  
 NEW YORK, 886 tons, 15-story hotel, 234-242 West Forty-eighth Street, to Drier Iron Works.  
 NEW YORK, 100 tons, electrical distributing station for New York Edison Co., to Reliance Steel Fabricating Co.  
 PORT IVORY, STATEN ISLAND, 100 tons, oil barge for Procter & Gamble Co., to Sun Ship Building Co.  
 WEST HAVEN, STRAW, State Orthopedic Hospital, tonnage unstated, to Oswego Bridge & Iron Co.  
 PHILADELPHIA, 1500 tons, bank and office building at 1420 Walnut Street, to McClintic-Marshall Co.  
 PHILADELPHIA, 225 tons, building for Electric Storage Battery Co., to American Fabricated Steel Co.  
 PHILADELPHIA, 600 tons, dining hall for Girard College, to Jones & Laughlin Steel Corporation.  
 WATSON, W. VA., 500 tons, highway bridges, to Mount Vernon Bridge Co.  
 PECKS MILLS, W. VA., 400 tons, highway bridge, to Mount Vernon Bridge Co.  
 NORTHERN PACIFIC RAILWAY, 350 tons, bridge, to Mount Vernon Bridge Co.  
 CATLETTSBURG, KY., 900 tons, bridge, to Mount Vernon Bridge Co.  
 ALBANY, N. Y., 330 tons, service station for Mack-International Motor, to Eastern Bridge & Structural Co.  
 PENNSYLVANIA RAILROAD, 600 tons, bridges, to American Bridge Co. This added to awards reported last week make a total of about 2000 tons by Pennsylvania Railroad.  
 BUFFALO, 600 tons, cement plant for Great Lakes-Portland Cement Co., to Kellogg Structural Steel Co.  
 BUFFALO, 100 tons, plant addition for Wurlitzer Co., to R. S. McMannus Steel Construction Co.  
 CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS RAILROAD, 1000 tons, bridges, to McClintic-Marshall Co.  
 CINCINNATI, 125 tons, building for Chevrolet Motor Co., to L. Schreiber & Sons, Cincinnati.  
 SULLIVAN, IND., 250 tons, Sullivan County Courthouse, to Bedford Foundry & Machine Co., Bedford, Ind.  
 TENNESSEE, 1350 tons, two highway bridges for the State Highway Commission, to Nashville Bridge Co.  
 UPPER MISSISSIPPI RIVER, 500 tons, three towboats for Inland Waterways Commission, to Dubuque Boat & Boiler Co., Dubuque, Iowa.  
 RENO, NEV., 110 tons, Arcade Building, to Moore Dry Dock Co., Oakland, Cal.  
 LOS ANGELES, 400 tons, police substation and receiving hospital, to Brombacher Iron Works, Los Angeles.  
 LOS ANGELES, 500 tons, State armory, Exposition Park, to Minneapolis Steel & Machinery Co.  
 LOS ANGELES, 275 tons, Osteopathic Hospital, to McClintic-Marshall Co.  
 LOS ANGELES, 800 tons, Los Angeles Investment Co. Building, to Union Iron Works.  
 SAN LUIS OBISPO, CAL., 125 tons, County Hospital, to Central Iron Works, San Francisco.

SAN FRANCISCO, 180 tons, two apartment buildings for D. C. Coleman, to Golden Gate Iron Works, San Francisco.  
 KLAMATH, ORE., 210 tons, overhead crossing for Southern Pacific Railroad, to Moore Dry Dock Co.  
 SKYKOMISH, WASH., 100 tons, substation for Great Northern Railroad, to Minneapolis Steel & Machinery Co.  
 WENATCHEE, WASH., 100 tons, filtration plant, to unnamed fabricator.  
 TOKIO, JAPAN, 5500 tons, Mitsui Bank Building, to United States Steel Products Co.

### Structural Projects Pending

Inquiries for fabricated steel work include the following:

BOSTON, 835 tons, 700 tons of beams and 135 tons of plates for the Transit Department; bids close Aug. 4.  
 NEW YORK, 2300 tons, Masters Printing Building on West Thirty-third Street.  
 NEW YORK, 600 tons, building for the Bronx Gas & Electric Co.  
 GALLIPOLIS, OHIO, and WEIRTON, W. VA., Ohio River bridges, 5700 tons each.  
 HAINESVILLE, OHIO, 200 tons, music building for Lake Erie College.  
 BUFFALO, 500 tons, Curtis Express Building.  
 MIAMI, FLA., 400 tons, municipal pier.  
 PENNSYLVANIA RAILROAD, 300 tons, bridges.  
 LOUISVILLE, 1000 tons, Brown Building; Preston Bradshaw, St. Louis, architect.  
 LOUISVILLE, tonnage unknown, Heyburn Building; Graham, Anderson, Probst & White, Chicago, architects.  
 INDIANAPOLIS, 300 tons, Indiana Theater; bids close July 28.  
 GERARD, OHIO, 500 tons, Trumbull County Viaduct.  
 CHICAGO, 8000 tons, building for State Bank of Chicago.  
 SPRINGFIELD, ILL., 500 tons, Ridgway Farmer Bank.  
 CEDAR RAPIDS, IOWA, 1300 tons, Quaker Oats Building.  
 LITTLE ROCK, ARK., 500 tons, building for J. Goldberg & Sons.  
 PORTLAND, ORE., 2200 tons, building for Portland Gas & Coke Co.  
 PORTLAND, 209 tons, three bridges for Oregon Highway Commission; bids close July 29.  
 SANTA MONICA, CAL., 2000 tons, Miramar Hotel.  
 OAKLAND, CAL., 190 tons, hospital, Eighty-seventh Avenue and East Fourteenth Street.  
 LAGUNA BEACH, CAL., 1500 tons, lock-bar pipe line; bids Aug. 3.  
 HONOLULU, T. H., 300 tons, pipe line for American Factors.

## RAILROAD EQUIPMENT

### Missouri Pacific Inquires for 2000 Refrigerator Cars—35 Locomotives Being Bid On

The largest freight car inquiry since last month, calling for 2000 refrigerator cars, has been issued by the American Refrigerator Transit Co. The Seaboard Air Line is inquiring for 35 locomotives. Details follow:

The Seaboard Air Line is in the market for 35 locomotives. The American Refrigerator Transit Co. is in the market for 2000 refrigerator cars.

The Department of City Transit, 1211 Chestnut Street, Philadelphia, is asking bids until Aug. 27 for 150 steel passenger cars and 10 extra car trucks. H. E. Ehlers is director.

### Absorbs Larger Detroit Scrap Production

DETROIT, July 27.—Offerings of waste material by the largest producers for August in several instances show a heavier tonnage than those of July. Current demand is sufficient to absorb all of this material, despite the increase in tonnage, but the market shows no further signs of advancing on any of the grades offered.

The following prices are quoted on a gross ton basis f.o.b. producers' yards, excepting stove plate, No. 1 machinery cast and automobile cast, which are quoted on a net ton basis:

Heavy melting and shoveling steel	\$13.25 to \$13.75
Borings and short turnings	9.00 to 9.50
Long turnings	8.00 to 8.50
No. 1 machinery cast	17.00 to 18.00
Automobile cast	21.50 to 22.50
Hydraulic compressed	11.50 to 12.00
Stove plate	13.50 to 14.50
No. 1 busheling	11.25 to 11.75
Sheet clippings	7.00 to 7.50
Flashings	10.25 to 10.75

ESTABLISHED 1855

# THE IRON AGE

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Member of the Audit Bureau of Circulations and of  
Associated Business Papers, Inc.

Published every Thursday by the IRON AGE PUBLISHING CO., 239 West 39th Street, New York  
C. S. BAUR, *General Advertising Manager*

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George H. Griffiths, *Secretary*

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BRANCH OFFICES—Chicago: Otis Building. Pittsburgh: Park Building. Boston: 425 Park Square Building. Philadelphia: 1402 Widener Building. Cleveland: 1362 Hanna

Building. Detroit: 7338 Woodward Ave. Cincinnati: First National Bank Bldg. Buffalo: 833 Ellicott Square. Washington: 536 Investment Building. San Francisco: 320 Market St.

Subscription Price. United States and Possessions, Mexico. Cuba, \$6.00; Canada, \$8.50; Foreign, \$12.00 per year. Single copy 25 cents.

Entered as second-class matter, June 18, 1879, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

PRINTED IN U. S. A.

## Further on the Foreign Debts

WHEN it appeared that the United States was going into the war and that in view of our unpreparedness it was doubtful if we could give any material help by military arms there were some of our people who argued that we should assist by giving, not loaning, money and material.

After the war, when we began to count up economic consequences, we found that our loans had reached staggering totals, and some among us were for halving them; others urged canceling them.

Secretary Mellon in a characteristically lucid communication has made clear just what we have done. In the first place he points out that a large part of the European indebtedness to us was incurred *after* the war. He does not over-emphasize what is well known to economists that to a large extent this indebtedness was recklessly incurred and its proceeds unwisely squandered for selfish ambitions.

Secretary Mellon summarizes that we have settled with Great Britain for a "present value" of \$3,297,000,000 and that her post-Armistice indebtedness to us was \$660,000,000. France's after-the-war indebtedness alone, with interest, was \$1,655,000,000 and we have settled for a "present value" of \$1,681,000,000 for everything. The corresponding figures for Italy are \$800,000,000 and \$426,000,000 respectively. For Belgium \$258,000,000 and \$192,000,000. Similarly as to Serbia.

We have, therefore, canceled all that we gave during the war, except as regards Great Britain. In the glory of that great nation there is no attitude of mendicancy.

Secretary Mellon further makes it clear that these foreign loans were not made out of any American governmental fund. The means were raised from our people on the Liberty and Victory loans and proceeds thereof were reloaned to Europe. Our Liberty and Victory loans have to be repaid in full. Every penny that has been knocked off the obligations of the several countries of Europe has still to be raised by taxation of our own people. No American has any reason to reproach his fellow citizens for absence of generosity.

## High Output of Pipe and Tubes

LAST year made a new record in production of seamless steel tubes and of cast iron pipe and fittings. In welded tubular goods it fell short of being a record year, chiefly because the demand for oil country goods was unusually light. There have been very interesting swings in relative tonnages produced of the different classes of tubular goods since 1913, when production statistics were first gathered. Some of these changes have been due to changes in the preferences of buyers and some to varying degrees of activity in consuming lines.

The total production of welded iron and steel tubular goods, seamless tubing and cast iron pipe and fittings was 3,485,000 gross tons in 1913 and 5,680,000 gross tons in 1925, the increase being 63 per cent. The increase in production of "merchant" or "standard" pipe, of the welded variety, was 62 per cent, but there was a strong swing from black to galvanized, as the black production increased only 49 per cent while the galvanized increased 105 per cent. There was also a swing from wrought iron to steel, as the production of wrought iron standard pipe decreased by 30 per cent in the 12 years. It was 13.3 per cent of the total standard pipe production in 1913 and only 5.8 per cent in 1925.

Last year was a relatively poor year in production of "oil country goods," the designation including casing and other well material, also drive pipe, drill pipe and line pipe. Some oil country goods are also produced in seamless, but this is not reported separately from other seamless. Last year was the poorest post-war year, barring only 1921, in the production of welded oil country tubular goods. This year, on the other hand, is quite likely to make a new high record. Before the middle of last year the peak oil production of all time had been reached. This year opened with exceptionally favorable drilling prospects, and while oil production has increased somewhat it remains far below last year's peak, and there is very active drilling.

Seamless tubing made a remarkable showing last year, the 568,190 gross tons produced compar-



ing with 403,783 tons in 1923, previously the record year, and with 108,567 tons in 1913. Production more than quadrupled in the 12 years. Included in last year's production was 162,294 tons of seamless boiler tubes. For previous years the boiler tube production was not segregated from the total of seamless production. In 1913 the production of welded boiler tubes was 127,820 tons, and there could not have been any large amount of seamless boiler tubes in that year. In contrast, the 1925 production was 62,778 tons of welded boiler tubes and 162,294 tons of seamless boiler tubes, a total of 225,072 tons.

From 1913 to 1925 production of cast iron pipe and fittings increased 84 per cent, to 2,324,047 net tons or 2,075,042 gross tons. There was also a record importation of cast iron pipe last year, at 51,215 gross tons. The larger increase in production of cast iron pipe than of welded tubular material is presumably simply a reflection of increased activity in lines naturally involving the use of the foundry product.

As to buyers' preferences, the comparison between 1913 and 1925 shows a swing away from iron to steel in merchant or standard pipe, also a swing from black to galvanized in this material, and a swing from welded to seamless, particularly in the case of the boiler tubes.

### More Steel Per Man

IT is fully recognized that in the manufacturing industries improvements are continually being made in equipment and methods, so that productivity per man is, or rather should be, increased. The human element is a factor. Given the same methods and equipment, men may become more skillful and keen, or less. Improvements supplied by the employer may contribute in part to the workman's having an easier time.

Nearly all that we have now, apart from food, is due to improvements made in approximately a century. One might say that housing and clothing should be excluded in this statement along with food; but the conveniences of our housing today and the multiplicity of articles of clothing worn in the course of a year are such that the amount of housing and clothing of a century ago is but a small fraction of today's.

There has grown up in the past few years a disposition to doubt whether we are now making similar progress. In a long range view the progress is plainly seen without definite measurement. To get an idea of the recent or present pace, precise measurement is requisite. This is furnished for several industries by some studies of Ethelbert Stewart, Commissioner of the Bureau of Labor Statistics, as referred to in last week's IRON AGE, page 211. The analysis of labor productivity in the iron and steel industry is made for the years 1914 to 1925 inclusive, with the omission of 1915. Allowance is made for the shift from the 12-hour to the 8-hour day, whereby the showing is of man-hours rather than of the number of men in employment.

The bare figures appear to show an increase of 50 per cent from 1914 to 1925, but Mr. Stewart warns against acceptance of this as a general con-

clusion, saying that "this is undoubtedly an exaggeration of actual facts, for the year 1914 was one of severe depression, while 1925 was at least a good year." It will be interesting to consider how much allowance ought to be made. The productivity index as found is given below for the years studied. It represents the relation between the man-hours of employment and the actual production, with 1914 taken as base:

*Labor Productivity in Iron and Steel, Relatives*

1914.....	100.0	1920.....	112.4
1915.....	.....	1921.....	93.2
1916.....	123.1	1922.....	129.7
1917.....	113.9	1923.....	130.8
1918.....	103.7	1924.....	128.2
1919.....	96.4	1925.....	149.3

As a plant requires less labor per ton the more fully it is employed, a reduction of the above figures to a comparable basis would involve making an addition to the figure in the case of an inactive year, or a deduction in the case of an active year, the former being obviously preferable. Recalling the history of affairs in steel, judgment can be exercised as to other allowances. During American participation in the war, effort to do good work was impaired by large labor turnover and by shortages of material. In 1919 the strike reduced productivity.

We can apply these considerations to the figures computed by Mr. Stewart. Apart from a good bit of labor unrest in some districts, 1916 was a fairly typical year for its time as to efficiency, and it was one of very heavy production. The 123.1 given for it may be taken as not far out, while the next three years were off as to performance. Then there is the great dip in 1921, obviously due to light production. The performance of 93.2 was 23 per cent under the mean of the year before and after, while tonnage production was 49 per cent under. As 1914 was not nearly so much "off" as 1921, a correction two-thirds as great may be applied. That would change the 100.0 in the table above to 118.

Starting with 118 for 1914, the figures hang together quite well when we allow for a letting down beginning with 1917—for two years on account of the war; for another year on account of post-war laxity and the strike; for 1920 on account of general laziness; for 1921 on account of tonnage being so light. The curve thus smooths out quite nicely, and we have after allowances an increase in productivity, per man-hour—not per man, it must be remembered—of about 27 per cent in 11 years from 1914 to 1925, including one of 15 per cent in three years from 1922 to 1925.

This is perfectly consistent: a slow gain in eight years on account of backsets, and then a much more rapid gain, which it may be hoped represents the pace the industry is now engaged in following.

### The 1925 Trend in Steel Castings

STEEL foundries did not parallel the record output made last year by the ingot-producing plants. The total of 1,252,786 gross tons of steel castings had been surpassed in four preceding years, with the peak at 1,458,031 tons in 1923. In two respects, however, last year's make was unusual.

The new record of 112,583 tons was made in alloy steel castings, exceeding by 22 per cent the



92,220 tons in 1923, which had been the post-war high point. Nearly one-third of last year's output was made in electric furnaces and another third was acid open-hearth steel.

Open-hearth, converter and crucible steel castings maintained in general their relative importance, but more castings than ever were made from electric furnaces, the total of 279,534 tons being 22.3 per cent of the total and comparing with 235,958 tons in 1923.

### Eastern Steel Co. to Rebuild Open-Hearth Furnace

Edward L. Herndon, receiver for the Eastern Steel Co., Pottsville, Pa., has received permission from the United States District Court in Philadelphia to rebuild an 85-ton open-hearth furnace, the output of which is needed because of a shortage of steel at the Eastern structural rolling mills. The furnace has been idle for some time. Work will be rushed and it is expected that it will be in operation in about 10 days. The company has been operating its mills as full as the steel supply would permit.

### Heavy Output of Pig Iron and Steel in Alabama

BIRMINGHAM, July 27.—Output of pig iron, steel, coal and coke in Alabama during the first six months of 1926 was so large that production records for all four commodities are expected to be broken for the entire year. The Alabama Mining Institute estimates coal output for the first six months at 10,013,000 tons, based on car loadings and reports from producers.

### Rates from Newark on Lead Alloys and Terne Metal Held Unreasonable

WASHINGTON, July 27.—Passing upon a complaint by the Federated Metals Corporation, the Interstate Commerce Commission in an opinion last week held that rates on certain alloys of lead in carloads from Newark, N. J., to Buffalo, Pittsburgh, Chicago, and other destinations in Illinois, Indiana, Iowa, Pennsylvania, New York, Kentucky and Tennessee, are unreasonable. It also found not justified proposed increased rates on terne metal in carloads from Newark and Brills, N. J., to Buffalo and Buffalo rate points and destinations in Central territory. The commission ordered cancellation of the schedules, which had been suspended but without prejudice to the filing of new schedules in conformity with the commission's findings. The railroads contended that these alloys should take fifth class rates and that the proposal to cancel commodity rates on terne metal would so result. The commission held that the proposed schedules had not been justified in their entirety but that the sixth class basis would be reasonable for applications on terne metal.

### Upholds Rates on Pig Iron from Pennsylvania to New England

WASHINGTON, July 27.—Recommending dismissal of a complaint of the Hanna Furnace Co., the Rogers Brown Iron Co., and the Wickwire Spencer Steel Co., Examiner Jesse C. Harraman in a report to the Interstate Commerce Commission last week held that the rates of \$4.91 per gross ton on pig iron from Dubois and Punxsutawney, Pa., and \$3.65 from Charlotte, N. Y., to New England points are not unduly preferential as against the rate of \$4.91 from Buffalo. The examiner presented mileage scales, production of the affected furnaces, shipments to New England, and related facts and stated that the commission has repeatedly found that rate groups long established should not be lightly disturbed.

The report says the furnaces of the complainants have an annual production capacity of 1,150,000 gross

The rolled steel industry is of such commanding importance that the steel foundry, with its pace quite closely adjusted to demand from the railroads, is often overlooked. No spectacular expansion is to be expected, but with more study of the use of alloys and the greater skill of today in heat treatment of all steel castings, the products of the steel foundry should at least hold their own in the race with those of the forge, the rolling mill and the malleable shop.

tons, while the interveners, the Adrian Furnace Co., Dubois, and the Punxsutawney Furnace Co., Punxsutawney, each have a capacity of 250 tons per day.

The following table sets forth the percentage of New England shipments to total shipments from complainants' Rogers Brown furnaces and interveners' Adrian and Punxsutawney furnaces:

Year	Rogers Brown (Per Cent)	Adrian and Punxsutawney (Per Cent)
1917	7.0	30
1918	15.4	17
1919	17.3	12
1920	22.0	17
1921	13.3	10
1922	13.2	15
1923	13.6	18
1924	14.1	12
1925	14.7	*19

\*Furnaces shut down and shipments made from stock.

In the following table is set forth the amount of pig iron, stated in gross tons, shipped from the Adrian and Punxsutawney furnaces, as compared with that shipped by complainants to New England points:

Year	Adrian and Punxsutawney	Complainants
1917	31,551	66,916
1918	24,657	112,309
1919	8,206	104,821
1920	25,116	103,859
1921	2,832	15,474
1922	9,863	50,409
1923	21,878	84,063
1924	9,544	87,661
1925	2,845	89,834
Total for the nine years	136,492	715,346

"It will be noted from the above tables that the complainants shipped a greater amount of pig iron to New England in 1925 than in any year since 1920 and that the percentage of complainants' New England shipments to total amount shipped was greater in 1925 than any year since 1920," said the examiner. "Also that the complainants' intervening competitors' percentage of shipments to New England has not increased, but in fact in the year 1925 they only shipped 2845 tons of pig iron, which was taken from their previous year's stock. It will also be noted that complainants shipped more than five times as much pig iron to New England as its intervening competitors did."

### Finds Rates on Tank Steel to Oklahoma Too High

WASHINGTON, July 27.—In a proposed report to the Interstate Commerce Commission last week, Examiner William J. Harris, acting upon a complaint by the Sinclair Crude Oil Purchasing Co., held that the commission should find that rates on iron and steel tank material in carloads from points in Texas to destinations in Oklahoma are unreasonable to the extent that they exceed rates for like distances computed under the scale described on iron and steel articles in the Memphis-Southwestern Investigation case. It was recommended that this scale of rates be made applicable from July 1, 1922, and that prior to that time the rates be found unreasonable to the extent that they exceeded rates for like distances, to which that scale would bear the relation of 90 per cent. Award of reparation was recommended.

## J. & L. Scale Rates from Indiana to Chicago Suspended

WASHINGTON, July 27.—The Interstate Commerce Commission today announced a suspension from July 28 until Nov. 25 of schedules proposing to increase from 13c. to 19c. per 100 lb. rates on iron and steel products from Terre Haute and Brazil, Ind., to Chicago and intermediate points by way of the Chicago & Eastern Illinois Railway. The proposed rates were the object of protest from the affected shipping points in Indiana. It was contended that under the Jones & Laughlin scale, points in Illinois have been grouped and given lower rates into Chicago while the Indiana towns involved have been placed on a point-to-point rate basis instead of being grouped and therefore are discriminated against.

## Takes Over Export House of Otto Wolff & Co.

It is reported from Germany that the Otto Wolff interests have disposed of the Eisenausfuhr Otto Wolff & Co., Cologne, which has numerous export connections and subsidiary companies in the leading European and other foreign markets, to the Stahlunion G.m.b.h., export section of the recently formed Vereinigte Stahlwerke A. G. (United Steel Works), the main office of which is in Dusseldorf. Until formation of the United Steel Works this export house was the foreign representative of the Phoenix and Rheinstahl groups of mills, which are now included in the corporation.

Otto Wolff is a large stockholder in the United Steel Works and the transfer of a part of his export interests to the new company is taken to be in the direction of giving the new corporation direct foreign representation. The transfer of the trading company, according to reports, does not include the Otto Wolff connections for export to Russia and the Near East. The office of the Eisenausfuhr Otto Wolff & Co., 149 Broadway, New York, is continuing to operate at present without change of name or personnel.

## Forms the Landon Radiator Co.

BUFFALO, July 27.—Archer A. Landon, for many years vice-president in charge of manufacture for the American Radiator Co., has formed the Landon Radiator Co., which will shortly begin the manufacture of steam and hot water radiators in the former plant of the Pierce-Brown foundry in North Tonawanda, N. Y. The company is capitalized at \$50,000 and incorporation papers will be filed immediately. Associated with Mr. Landon will be Seymour H. Knox, George F. Rand and other Buffalo men. Production will begin in December. Mr. Landon in the war was chief of the aircraft production board at one time, and also adviser to Secretaries Wilson and Lane and organizer of the War Labor Board. He also aided the program of shell production in this country for the allied countries before the United States entered the war.

## To Determine Countervailing Duty on Indian Iron

WASHINGTON, July 27.—Determination of the countervailing duty on imports of pig iron from the Tata Iron & Steel Co., in India to the United States likely will be reached at a conference here tomorrow between customs officials and representatives of domestic merchant blast furnace interests. The countervailing order has been in effect since April 16, but the duty has been in suspension and entries liquidated pending the amount of duty to be assessed. Considerable delay has been experienced in the study of the method to be arrived at for the purpose of finding what the duty should be. The conference is to be held with a view to settling definitely upon the duty.

The order was the outgrowth of complaints by Eastern merchant blast furnace interests against heavy

imports of pig iron from the Tata works and request was made for application of the duty because the Indian government pays a bounty of 12 rupees, equivalent to approximately \$3.11 per ton, on 70 per cent of the steel ingot production in India. This bounty was held to constitute an indirect subsidy on the production of pig iron.

## Plant Visitations Arranged for Steel Treating

A fairly comprehensive program has been arranged for plant visitations during the eighth annual convention and exposition of the American Society for Steel Treating to be held in Chicago the week of Sept. 20. The chairman of the committee is Theodore E. Barker, president Accurate Steel Treating Co. of Chicago. The following general program has been arranged:

Tuesday, Sept. 21: Trip No. 1. Buda Co. and drop forge department of Wyman-Gordon Co., Harvey, Ill.; Trip No. 2. Lewis Institute and Miehle Printing Press & Mfg. Co.; Trip No. 3. American Forge Co. and tractor works of the International Harvester Co.

Wednesday, Sept. 22: Trip No. 4. West Pullman works of the International Harvester Co.; Trip No. 5. Indiana Harbor plant of the Youngstown Sheet & Tube Co. and the plant of the Inland Steel Co.; Trip No. 6. Danley Machine Specialties Co., Inc., Chicago; Trip No. 7. Pettibone Mulliken Co., electric furnace production of manganese steel and its heat treatment.

Thursday, Sept. 23: Trip No. 8. Western Electric Co.; Trip No. 9. Plant of the Interstate Iron & Steel Co. and of the Illinois Steel Co., South Chicago.

Friday, Sept. 24: Trip No. 10. Modern shops of the Illinois Central Railroad and the plant of the Pullman Car Works; Trip No. 11. Columbia Tool Steel Co.'s and the American Manganese Steel Co.'s plants at Chicago Heights; Trip No. 12. Die block plant of A. Finkl & Sons and the plant of the Aetna Ball Bearing Co.; Trip No. 13. Armour Institute of Technology.

## Gain in Output of Malleable Castings

WASHINGTON, July 27.—With five of the 139 reporting plants idle, production of malleable castings in June totaled 61,023 net tons against 60,128 tons in May, according to the Department of Commerce. Shipments in June amounted to 61,999 tons and orders booked, 45,548 tons. Orders showed a decline from the total for May, which was 49,179 tons. The operating rate was 55.3 per cent of capacity.

Production during the first half of this year was 404,463 tons, as compared with 370,437 tons in the first six months of 1925.

## High Operating Rate at Youngstown

YOUNGSTOWN, July 27.—The Republic Iron & Steel Co. this week started its No. 1 stack in the Haselton group, giving it four active furnaces in this complement, representing the entire group. No. 1 furnace has been idle for two years. The additional pig iron is needed to enable the company to increase steel production, for rolling mill operations. The company added two more open-hearth furnaces to its active list, now having 12 of 15, in operation.

With 58 of 68 open-hearth furnaces in the district active, steel ingot output is roughly at 85 per cent, the highest July rate the industry in this section has known in many years.

The Carnegie Steel Co. has increased the operating rate of its Youngstown district plants to 88 per cent from 85 per cent. This week the Sharon Steel Hoop Co. added one open-hearth furnace; steel tube production continues at 88 per cent.

The Trumbull Steel Co. is averaging 95 per cent, operating all departments except one strip mill. The Sharon Steel Hoop Co. reports production as high as mechanical limitations will permit. The A. M. Byers Co. is operating its rolling mills at the Girard works in full, and 75 of 88 puddling furnaces. The Youngstown Sheet & Tube Co. is averaging 75 to 80 per cent in this district, and 80 per cent at its Chicago plants.



# Iron and Steel Markets

## Larger Output as July Closes

Steel Corporation Steps Up to 87 Per Cent—Some Increase in Unfilled Orders—Firmer Prices a Factor—Track Requirements 10 Per Cent Greater

**E**XTRAORDINARY though the performance of the steel industry has been throughout July, the fact that the final week is marked by an upturn in operations brings a fresh surprise.

From an 83 per cent ingot production last week the Steel Corporation's rate is now 87. However, because of the high temperatures of three days, finishing mills did not hold up so well as steel-making departments. Thus new orders and specifications have somewhat outrun shipments and the corporation's unfilled orders as of July 31 are likely to show a slight increase.

As July ends delivery periods are lengthening on some products, giving further evidence of the extent to which the mills covered their trade in the broader buying at the close of the first half of the year. Even though its effect cannot be fully measured, the firmer price stand taken by producers in June is recognized as a factor in the new midsummer situation of 1926.

Irregularity continues in prices of sheets, cold rolled strip and cold finished steel bars, but in other products buyers have had limited success in winning concessions.

On the strength of the July performance, estimates for August are being revised in some cases to the point of expecting little or no recession. However, order books are showing some decrease in plates, shapes and bars, of which shipments have been large, but there has been an increase in sheets, tin plate and pipe, and automotive and agricultural implement demand may offset the decline in structural steel.

A feature of the week's buying has been several round lots of sheets and cold rolled strip steel for Michigan automobile plants.

The Steel Corporation's earnings of \$47,814,000 for the second quarter, quite exceeding predictions, reflected both the better prices of that period and profits from ore transportation. In the first half \$8.09 was earned on common stock, against \$6 in the first half of 1925, while surplus for the half year, \$23,323,000, was only \$6,300,000 less than the entire amount for 1925.

Prospects of rail and equipment buying in early fall are favorably canvassed at Chicago, though Western car shops are within a month of completing present orders. The American Refrigerator Transit Co. has inquired for 2000 cars and the Seaboard Air Line for 35 locomotives.

From the rate at which railroads have been taking rails and track supplies this year, producers now estimate that in these products 1926 will run 10 per cent beyond 1925 and thus will exceed the good record of 1923.

Lake shipyards have considerably more work

in sight. The Michigan Limestone & Chemical Co. is inquiring for a 13,000-ton freighter, and the Ann Arbor Railroad has plans for two more car ferries after placing one taking 2700 tons of steel.

Continuance of the year's high record of building activity appears in the week's awards of 29,000 tons of structural steel work, with new projects up for bids totaling 35,000 tons. Two bridges over the Ohio River at Gallipolis, Ohio, and Weirton, W. Va., will take 11,400 tons, a Chicago bank building 8000 tons, and a New York hotel award is 4800 tons.

Smaller bookings than in May are reported by the Department of Commerce for June in fabricated structural steel (228,750 tons, or 1 1-3 per cent off) fabricated plate work (37,401 tons, or 19½ per cent off) commercial steel castings (68,030 tons, or 14 per cent off) and malleable castings (45,548 tons, or 7 per cent off).

Heavy melting steel scrap is stronger at Pittsburgh and in eastern Pennsylvania largely because of competition among dealers for material with which to complete old orders. In eastern Pennsylvania and at Cincinnati prices are up 50c. a ton. The Chicago market, following a recent upward movement, is less active and slightly weaker. A Buffalo mill has brought considerable scrap from Duluth by water.

June imports of pig iron, 43,106 tons, were the smallest for this year, the monthly average being 52,675 tons. Imports of finished steel, however, were 51,443 tons, against 32,543 tons in May, rails and structural steel making most of the increase.

Since the middle of 1925, imports have been steadily rising. Incoming pig iron is at a rate 80 per cent higher than a year ago, and other iron and steel items 50 per cent higher.

Imports for the fiscal year, 1,080,781 tons, were over one-half the volume of exports. Pig iron for several months has been over half the total imports.

Japan has placed 3200 tons more rails in the United States, a large quantity of gas pipe and 5500 tons of fabricated structural steel, the last for the Mitsui Bank Building in Tokio.

More steel works have resumed in Great Britain following increasing imports of foreign coal. From 35 to 40 per cent of Welsh tin-plate mills are now running. Pig iron is in demand, stocks are negligible and prices have advanced 20s. since May 1.

THE IRON AGE pig iron composite price remains at the year's low point, \$19.46 per gross ton.

The finished steel composite price, 2.431c. per lb., is likewise unchanged.



## A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics  
At Date, One Week, One Month, and One Year Previous

### For Early Delivery

Pig Iron, Per Gross Ton:	July 27, 1926	July 20, 1926	June 29, 1926	July 28, 1925
No. 2X, Philadelphia....	\$22.26	\$22.26	\$22.26	\$21.26
No. 2, Valley Furnace....	17.50	17.75	17.75	18.50
No. 2, Southern, Cin'tif....	24.19	24.19	24.19	22.55
No. 2, Birmingham....	21.00	21.00	21.00	18.00
No. 2 foundry, Chicago*..	21.00	21.00	21.00	20.50
Basic, del'd, eastern Pa..	21.00	21.00	21.25	21.50
Basic, Valley furnace....	17.50	17.50	18.00	18.00
Valley Bessemer del. P'gh	20.26	20.26	20.76	20.76
Malleable, Chicago*.....	21.00	21.00	21.00	20.50
Malleable, Valley .....	17.75	17.75	17.75	18.50
Gray forge, Pittsburgh....	18.76	19.01	19.01	19.76
L. S. charcoal, Chicago....	29.04	29.04	29.04	29.04
Ferromanganese, furnace..	88.00	88.00	88.00	115.00

Rails, Billets, Etc., Per Gross Ton:	July 27, 1926	July 20, 1926	June 29, 1926	July 28, 1925
O.-h. rails, heavy, at mill..	\$43.00	\$43.00	\$43.00	\$43.00
Light rails at mill.....	34.00	34.00	34.00	35.84
Bess. billets, Pittsburgh...	35.00	35.00	35.00	35.00
O.-h. billets, Pittsburgh...	35.00	35.00	35.00	35.00
O.-h. sheet bars, P'gh....	36.00	36.00	36.00	35.00
Forging billets, base, P'gh	40.00	40.00	40.00	40.00
O.-h. billets, Phila.....	40.30	40.30	40.30	40.30
Wire rods, Pittsburgh....	45.00	45.00	45.00	45.00
	Cents	Cents	Cents	Cents
Skelp, gr. steel, P'gh, lb..	1.90	1.90	1.90	1.90

Finished Iron and Steel,	July 27, 1926	July 20, 1926	June 29, 1926	July 28, 1925
Per Lb. to Large Buyers: Cents	Cents	Cents	Cents	Cents
Iron bars, Philadelphia....	2.22	2.22	2.22	2.22
Iron bars, Chicago.....	2.00	2.00	2.00	1.90
Steel bars, Pittsburgh....	2.00	2.00	2.00	2.00
Steel bars, Chicago.....	2.10	2.10	2.10	2.10
Steel bars, New York....	2.34	2.34	2.34	2.34
Tank plates, Pittsburgh...	1.90	1.90	1.90	1.90
Tank plates, Chicago....	2.10	2.10	2.10	2.10
Tank plates, New York....	2.24	2.24	2.24	2.14
Beams, Pittsburgh.....	2.00	2.00	2.00	2.00
Beams, Chicago .....	2.10	2.10	2.10	2.10
Beams, New York .....	2.34	2.34	2.34	2.14
Steel hoops, Pittsburgh...	2.50	2.50	2.50	2.40

\*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.  
†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 2.75.

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

Sheets, Nails and Wire,	July 27, 1926	July 20, 1926	June 29, 1926	July 28, 1925
Per Lb. to Large Buyers: Cents	Cents	Cents	Cents	Cents
Sheets, black, No. 28 P'gh	3.10	3.10	3.10	3.15
Sheets, black, No. 28, Chicago dist. mill.....	3.25	3.25	3.25	3.30
Sheets, galv., No. 28, P'gh	4.20	4.25	4.25	4.20
Sheets, galv., No. 28 Chicago dist. mill.....	4.40	4.40	4.40	4.30
Sheets, blue, 9 & 10, P'gh	2.30	2.30	2.30	2.30
Sheets, blue, 9 & 10, Chicago dist. mill.....	2.40	2.40	2.40	2.40
Wire nails, Pittsburgh...	2.65	2.65	2.65	2.65
Wire nails, Chicago dist. mill .....	2.70	2.70	2.70	2.70
Plain wire, Pittsburgh...	2.50	2.50	2.50	2.50
Plain wire, Chicago dist. mill .....	2.55	2.55	2.55	2.55
Barbed wire, galv., P'gh..	3.35	3.35	3.35	3.35
Barbed wire, galv., Chicago dist. mill.....	3.40	3.40	3.40	3.40
Tin plate, 100 lb. box, P'gh	\$5.50	\$5.50	\$5.50	\$5.50

Old Material, Per Gross Ton:	July 27, 1926	July 20, 1926	June 29, 1926	July 28, 1925
Carwheels, Chicago.....	\$16.00	\$16.50	\$16.00	\$17.50
Carwheels, Philadelphia...	17.00	17.00	17.00	18.00
Heavy steel scrap, P'gh..	17.00	17.00	16.25	18.50
Heavy steel scrap, Phila..	15.75	15.25	15.00	16.00
Heavy steel scrap, Chicago	14.00	14.50	13.50	16.00
No. 1 cast, Pittsburgh...	16.00	16.00	15.50	17.00
No. 1 cast, Philadelphia...	17.00	17.00	17.00	18.00
No. 1 cast, Ch'go (net ton)	17.00	17.50	16.75	17.50
No. 1 RR. wrot. Phila...	16.50	16.50	16.50	17.50
No. 1 RR. wrot. Ch'go (net)	13.50	13.50	13.00	14.50

Coke, Connellsville, Per Net Ton at Oven:	July 27, 1926	July 20, 1926	June 29, 1926	July 28, 1925
Furnace coke, prompt....	\$2.85	\$3.00	\$2.75	\$2.90
Foundry coke, prompt ....	4.00	4.00	4.00	3.75

Metals,	July 27, 1926	July 20, 1926	June 29, 1926	July 28, 1925
Per Lb. to Large Buyers: Cents	Cents	Cents	Cents	Cents
Lake copper, New York...	14.37 1/2	14.25	14.00	14.50
Electrolytic copper, refinery	14.12 1/2	14.00	13.62 1/2	14.12 1/2
Zinc, St. Louis.....	7.47 1/2	7.45	7.17 1/2	7.30
Zinc, New York.....	7.82 1/2	7.80	7.52 1/2	7.65
Lead, St. Louis.....	8.70	8.50	8.00	8.20
Lead, New York.....	8.90	8.65	8.25	8.50
Tin (Strait), New York...	63.50	63.37 1/2	61.62 1/2	58.37 1/2
Antimony (Asiatic), N. Y.	16.00	14.50	13.50	17.00

## Pittsburgh

### July Ingot Production Shows Gain—Pressing Demand for Tin Plate and Pipe

PITTSBURGH, July 27.—The midsummer lull in steel buying and production is yet to occur. If what has happened in this and nearby districts in the past month is duplicated in other producing sections, ingot production in July will exceed that of June, because in the Pittsburgh-Youngstown-Johnstown-Wheeling area there has been a steady expansion of steel output throughout the month and the average for this area will be above 75 per cent of capacity, as against around 70 per cent in June.

The extreme heat of last week caused considerable curtailment of finishing mill operations, notably in sheet and tin plate mills, but it does not seem to have materially affected ingot production, which was fully 80 per cent of capacity. This week's schedules show a maintenance of that rate.

Buyers have been specifying generously against contracts for plates, shapes and bars, while orders for sheets are increasing, and with the demand for pipe and tin plate showing all of its recent urgency, it is not hard to understand a rising rate of ingot production at a time when the tendency ordinarily is in the other direction.

Pipe and tin plate are wanted in a great hurry because requirements are such that they must be satisfied promptly, if at all.

Since this month has made such a good showing in production and shipments, it is now believed that the

industry may go through the entire summer without the usual letdown, or if there is a recession, it will be very slight as compared with other years. As against some reduction of order books in plates, shapes and bars, in which specifications have been heavier than new buying, there have been increased bookings in sheets, tin plate and pipe. To balance any decline in the consumption of structural steel are probable increases in the demand from the automotive and agricultural implement industries. Many regard present prospects as being better than they were 30 days ago. Price irregularity continues in sheets and cold-finished steel bars, but in other finished products buyers are making no headway in winning concessions.

The pig iron market, in marked contrast with the steel market, is not only very dull but shows a distinctly weak undertone. Foundry grade is quotable this week at \$17.50, Valley furnace, for No. 2 grade, that price having been named by at least two producers against pending business. Continued scarcity of supplies, rather than a brisk consuming demand, accounts for a very firm market in scrap. Producers have rather strong ideas about future business in both coke and coal, but the spot furnace coke market has weakened slightly since a week ago because of blast furnace suspensions and the very limited demand from furnaces now in production.

Pig Iron.—None of the business reported as pending a week ago has yet been closed, and in the absence of important sales the drift of prices is not at all clearly defined except on foundry iron, on which it is known that at least two producers have made a quotation of \$17.50, Valley furnace, for No. 2 grade against inquiries that developed about 10 days ago. This repre-

sents a further recession of 25c. a ton in that grade, which strangely enough has moved in small lots in the past week at as high as \$18.50. Generally, however, melters by a little shopping can get even small lots at \$18, and that is more representative at the moment of the market maximum. Steel foundries in this district are not operating at much better than 50 per cent of capacity because of light railroad demands, and the melt of foundry iron is not so heavy that producers are being urged to make shipments. Inquiries for basic iron still are lacking, and while a fair-sized tonnage of Bessemer grade is pending, actual sales are small. The Jones & Laughlin Steel Corporation is starting one of its Eliza furnaces this week, but is taking this step because one of its Aliquippa group will probably go down for relining within the next two weeks. The Republic Iron & Steel Co. has put on a blast furnace at Youngstown.

We quote Valley furnace, the freight rate for delivery to the Cleveland or Pittsburgh district being \$1.76 per gross ton:

Basic .....	\$17.50
Bessemer .....	\$18.50 to 19.00
Gray forge .....	17.00 to 17.50
No. 2 foundry .....	17.50 to 18.00
No. 3 foundry .....	17.00 to 17.50
Malleable .....	17.75 to 18.00
Low phosphorus, copper free .....	27.50

**Ferroalloys.**—Spiegeleisen of higher manganese content is almost unobtainable, as the leading commercial producer appears oversold on the basis of the maximum tonnages named in contracts covering the third quarter and last half of the year. Permission is being asked to substitute 16 to 19 per cent material against contracts calling for 19 to 21 per cent alloy in the event the supply of the latter is not sufficient. Meanwhile, no new business in the higher grade is being accepted. Occasional inquiries are received for small tonnages of ferromanganese, but quotations above \$88, Atlantic seaboard, do not bring orders. There is good specifying against contracts for all of the more commonly used ferroalloys. Prices are given on page 309.

**Semi-Finished Steel.**—Open market business still is light, but there is a fairly good movement of billets, slabs and sheet bars against contracts. Specifying is best by tin plate makers, who are enjoying an exceptionally good business for this time of year. Sheet makers are taking out sheet bars steadily, but are not crowding makers for deliveries, and there is no real pressure for deliveries of billets and slabs by the strip makers who buy instead of make their own steel. Efforts of buyers to secure more favorable prices have not been successful. Skelp reflects in specifications the active market in pipe, and a better market in wire product has brought out more releases against contracts for wire rods. Prices are given on page 309.

**Wire Products.**—There is the same constancy to the demand there has been all summer. This is explained by the fact that neither jobbers nor manufacturing consumers have felt the necessity of carrying large

stocks, and with sales into consumption large, as is usual at this time of year, their calls upon the mills have had to be frequent. Leading producers in this district still are holding to \$2.65, base, per keg on bright nails and \$2.50, base, per 100 lb. on plain wire.

**Rails and Track Supplies.**—Current demands for spikes and other track accessories, although individually small, make a fairly satisfactory total business for this season. Prices are holding well. Little standard-section rail tonnage is coming out in this district. Demand for light rails is steady, but efforts to advance prices are not successful. Prices are given on page 307.

**Tubular Goods.**—Pipe producers still are experiencing heavy demand for the lap-weld sizes, and production is being pressed to capacity in the effort to make shipments as promptly as they are wanted. There also is practically full operation of seamless pipe capacity, since the comparatively slight difference between the cost of welded and seamless casing and drill pipe is helping the latter, especially in the deep well districts. Mills have not materially shortened their delivery promises. Prompt delivery is being made on standard pipe, demand for which is remarkably steady. The general average of steel pipe output is around 90 per cent, with the National Tube Co. running its Pennsylvania works, which makes oil country pipe exclusively, at 100 per cent. There is nothing new as to prices except that the secondary market is stronger. There is a fairly good demand for boiler tubes, but ample open capacity and not much real strength to prices. Discounts are given on page 307.

**Sheets.**—Hot weather last week adversely affected production, but this was not an unmixed evil, for in the absence of an urgent demand order books are swelled by the amount of the lost production. Cooler weather has permitted a reestablishment of the recent schedules, calling for operations of about 75 per cent of capacity. There is no complaint about the volume of business, especially when comparison is made with other years at this season. The complaint centers mostly on prices, which makers generally regard as too low. But with observance of 3.15c., base Pittsburgh, for black and 4.30c., base, for galvanized, on the part of the few rather than the many, it may be that the comments on prices are based on costs rather than the operation of the law of supply and demand. As there has been no material change in prices in the past few weeks, it can be said that there is a measure of steadiness to the market. Prices are given on page 307.

**Tin Plate.**—There is something of a scramble for tin plate for early delivery, and makers having stock items that can be used to meet the emergency occasioned by the fact that container manufacturers underestimated their requirements are having no trouble in disposing of them. Meanwhile can makers are rushing in specifications for tonnages for delivery this month which, at the regular specifying time, did not seem to be required because of the doubtful crop out-

## THE IRON AGE Composite Prices

### Finished Steel July 27, 1926, 2.431c. Per Lb.

One week ago .....	2.431c.
One month ago .....	2.431c.
One year ago .....	2.439c.
10-year pre-war average .....	1.689c.

Based on prices of steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 88 per cent of the United States output of finished steel.

	High		Low
1926	2.453c., Jan. 5;	2.403c.,	May 18
1925	2.560c., Jan. 6;	2.396c.,	Aug. 18
1924	2.789c., Jan. 15;	2.460c.,	Oct. 14
1923	2.824c., April 24;	2.446c.,	Jan. 2

### Pig Iron July 27, 1926, \$19.46 Per Gross Ton

One week ago .....	\$19.46
One month ago .....	19.71
One year ago .....	18.96
10-year pre-war average .....	15.72

Based on average of basic and foundry irons, the basic being Valley quotation, the foundry an average of Chicago, Philadelphia and Birmingham.

	High		Low
1926	\$21.54, Jan. 5;	\$19.46,	July 13
1925	22.50, Jan. 13;	18.96,	July 7
1924	22.88, Feb. 26;	19.21,	Nov. 3
1923	30.86, March 20;	20.77,	Nov. 20



# Mill Prices of Finished Iron and Steel Products

## Iron and Steel Bars

### Soft Steel

#### Base Per Lb.

F.o.b. Pittsburgh mills.....	2.00c. to 2.10c.
F.o.b. Chicago.....	2.10c.
Del'd Philadelphia.....	2.32c.
Del'd New York.....	2.34c.
Del'd Cleveland.....	2.19c.
F.o.b. Birmingham.....	2.15c. to 2.25c.
C.i.f. Pacific ports.....	2.35c.
F.o.b. San Francisco mills.....	2.35c. to 2.40c.

### Billet Steel Reinforcing

F.o.b. Pittsburgh mills.....	2.00c. to 2.10c.
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### Rail Steel

F.o.b. mill.....	1.80c. to 1.90c.
F.o.b. Chicago.....	2.00c.

### Iron

Common iron, f.o.b. Chicago.....	2.00c.
Refined iron, f.o.b. P'gh mills.....	3.00c.
Common iron, del'd Philadelphia.....	2.22c.
Common iron, del'd New York.....	2.24c.

## Tank Plates

#### Base Per Lb.

F.o.b. Pittsburgh mill.....	1.90c.
F.o.b. Chicago.....	2.10c.
F.o.b. Birmingham.....	2.05c. to 2.15c.
Del'd Cleveland.....	2.09c.
Del'd Philadelphia.....	2.22c.
Del'd New York.....	2.24c.
C.i.f. Pacific ports.....	2.25c. to 2.30c.

## Structural Shapes

#### Base Per Lb.

F.o.b. Pittsburgh mill.....	2.00c. to 2.10c.
F.o.b. Chicago.....	2.10c.
F.o.b. Birmingham.....	2.15c. to 2.25c.
Del'd Cleveland.....	2.19c.
Del'd Philadelphia.....	2.22c. to 2.32c.
Del'd New York.....	2.24c. to 2.34c.
C.i.f. Pacific ports.....	2.30c. to 2.35c.

## Hot-Rolled Flats (Hoops, Bands and Strips)

#### Base Per Lb.

All gages, narrower than 6 in., P'gh.....	2.50c.
All gages, 6 in. and wider, P'gh.....	2.30c.
All gages, 6 in. and narrower, Chicago.....	2.60c.
All gages, wider than 6 in., Chicago.....	2.50c.
Cotton ties, f.o.b. Atlantic ports, per bundle of 45 lb.....	\$1.22
Cotton ties, f.o.b. Gulf ports, per bundle of 45 lb.....	1.20

## Cold-Finished Steel

#### Base Per Lb.

Bars, f.o.b. Pittsburgh mills.....	2.50c.
Bars, f.o.b. Chicago.....	2.50c.
Bars, Cleveland.....	2.55c.
Shafting, ground, f.o.b. mill.....	*2.70c. to 3.00c.
Strips, f.o.b. Pittsburgh mills.....	3.60c.
Strips, f.o.b. Cleveland mills.....	3.40c. to 3.60c.
Strips, delivered Chicago.....	3.90c.
Strips, f.o.b. Worcester mills.....	4.05c.

\*According to size.

## Wire Products

(To jobbers in car lots f.o.b. Pittsburgh and Cleveland)

#### Base Per Keg

Wire nails.....	\$2.65
Galv'd nails, 1-in. and longer.....	4.65
Galv'd nails, shorter than 1 in.....	4.90
Galvanized staples.....	3.35
Polished staples.....	3.10
Cement coated nails.....	2.65

#### Base Per 100 Lb.

Bright plain wire, No. 9 gage.....	\$2.50
Annealed fence wire.....	2.65
Spring wire.....	3.50
Galv'd wire, No. 9.....	3.10
Barbed wire, galv'd.....	3.35
Barbed wire, painted.....	3.10

Chicago district mill and delivered Chicago prices are \$1 per ton above the foregoing. Birmingham mill prices \$3 a ton higher; Worcester, Mass., mill \$3 a ton higher on production of that plant; Duluth, Minn., mill \$2 a ton higher; Anderson, Ind., \$1 higher.

## Woven Wire Fence

#### Base to Retailers Per Net Ton

F.o.b. Pittsburgh.....	\$65.00
F.o.b. Cleveland.....	65.00
F.o.b. Anderson, Ind.....	66.00
F.o.b. Chicago district mills.....	67.00
F.o.b. Duluth.....	68.00
F.o.b. Birmingham.....	68.00

## Sheets

### Blue Annealed

#### Base Per Lb.

Nos. 9 and 10, f.o.b. Pittsburgh.....	2.25c. to 2.30c.
Nos. 9 and 10, f.o.b. Ch'go dist. mill.....	2.40c.
Nos. 9 and 10, del'd Philadelphia.....	2.62c. to 2.72c.

### Box Annealed, One Pass Cold Rolled

No. 28, f.o.b. Pittsburgh.....	3.05c. to 3.15c.
No. 28, f.o.b. Ch'go dist. mill.....	3.25c.
No. 28, del'd Philadelphia.....	3.32c. to 3.42c.

### Galvanized

No. 28, f.o.b. Pittsburgh.....	4.20c. to 4.30c.
No. 28, f.o.b. Chicago dist. mill.....	4.40c.
No. 28, del'd Philadelphia.....	4.52c. to 4.62c.

### Tin Mill Black Plate

No. 28, f.o.b. Pittsburgh.....	3.10c. to 3.15c.
No. 28, f.o.b. Chicago dist. mill.....	3.25c.

### Automobile Body Sheets

No. 28, f.o.b. Pittsburgh.....	4.20c.
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### Long Ternes

No. 28, 8-lb. coating, f.o.b. mill.....	4.75c.
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## Tin Plate

#### Per Base Box

Standard cokes, f.o.b. P'gh district mills.....	\$5.50
Standard cokes, f.o.b. Gary and Elwood, Ind.....	5.60

## Terne Plate

(F.o.b. Morgantown or Pittsburgh)  
(Per package, 20 x 28 in.)

8-lb. coating, 100 lb. base.....	\$11.40
20-lb. coating I.C.....	\$16.20
25-lb. coating I.C.....	17.90
8-lb. coating I.C.....	11.70
30-lb. coating I.C.....	19.45
15-lb. coating I.C.....	14.85
40-lb. coating I.C.....	21.65

## Alloy Steel Bars

(F.o.b. Pittsburgh or Chicago)

S. A. E. Series Numbers	Base Per 100 Lb.
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2100* (1/2% Nickel, 0.10% to 0.20% Carbon).....	\$3.20 to \$3.25
2300 (3/4% Nickel).....	4.40 to 4.50
2500 (5% Nickel).....	5.50 to 5.65
3100 (Nickel Chromium).....	3.40 to 3.50
3200 (Nickel Chromium).....	5.00 to 5.25
3300 (Nickel Chromium).....	7.00 to 7.25
3400 (Nickel Chromium).....	6.25 to 6.50
5100 (Chromium Steel).....	3.40 to 3.50
5200* (Chromium Steel).....	7.00 to 7.50
6100 (Chrom. Vanadium bars).....	4.30
6100 (Chrom. Vanad. spring steel).....	3.80
9250 (Silicon Manganese spring steel).....	3.20 to 3.25
Carbon Vanadium (0.45% to 0.55% Carbon, 0.15% Vanad.).....	4.10 to 4.20
Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chrom., 0.15 Vanad.).....	4.30
Chromium Molybdenum bars (0.30—1.10 Chrom., 0.25—0.40 Molyb.).....	4.25 to 4.35
Chromium Molybdenum bars (0.50—0.70 Chrom., 0.15—0.25 Molyb.).....	3.40 to 3.50
Chromium Molybdenum spring steel (1—1.25 Chrom., 0.30—0.50 Molybdenum).....	4.50 to 4.75

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for cold-drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10 in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4 in. down to and including 2 1/2-in. squares, the price is \$5 a gross ton above the 4 x 4 billet price.

\*Not S. A. E. specifications, but numbered by manufacturers to conform to S. A. E. system.

## Rails

#### Per Gross Ton

Standard, f.o.b. mill.....	\$43.00
Light (from billets), f.o.b. mill.....	\$34.00 to 35.00
Light (from rail steel), f.o.b. mill.....	32.00 to 33.00
Light (from billets), f.o.b. Ch'go mill.....	36.00 to 38.00

## Track Equipment

### (F.o.b. Mill)

#### Base Per 100 Lb.

Spikes, 1/2 in. and larger.....	\$2.80 to \$3.00
Spikes, 1/2 in. and smaller.....	2.90 to 3.25
Spikes, boat and large.....	3.25
Track bolts, all sizes.....	3.90 to 4.50
Tie plates, steel.....	2.25 to 2.35
Angle bars.....	2.75

## Welded Pipe

Base Discounts, f.o.b. Pittsburgh District and Lorain, Ohio, Mills

### Butt Weld

Inches	Steel Black Galv.	Iron Black Galv.
1/2.....	45	19 1/2
3/4.....	51	25 1/2
1.....	56	42 1/2
1 1/4.....	60	48 1/2
1 1/2.....	62	50 1/2

### Lap Weld

2.....	55	43 1/2	2.....	23	7
2 1/2 to 6.....	59	47 1/2	2 1/2.....	26	11
7 and 8.....	56	43 1/2	3 to 6.....	28	13
9 and 10.....	54	41 1/2	7 to 12.....	26	11
11 and 12.....	53	40 1/2			

### Butt Weld, extra strong, plain ends

1/2.....	41	24 1/2	1/2 to 3/4.....	+19	+54
3/4.....	47	30 1/2	1.....	21	7
1.....	53	42 1/2	1 1/4.....	28	12
1 1/4.....	58	47 1/2	1 to 1 1/2.....	30	14
1 1/2.....	60	49 1/2			
2 to 3.....	61	50 1/2			

### Lap Weld, extra strong, plain ends

2.....	53	42 1/2	2.....	23	9
2 1/2 to 4.....	57	46 1/2	2 1/2 to 4.....	29	15
4 1/2 to 6.....	56	45 1/2	4 1/2 to 6.....	28	14
7 to 8.....	52	39 1/2	7 to 8.....	21	7
9 and 10.....	45	32 1/2	9 to 12.....	16	2
11 and 12.....	44	31 1/2			

To the large jobbing trade the above discounts on steel pipe are increased on black by one point, with supplementary discount of 5%, and on galvanized by 1 1/2 points, with supplementary discount of 5%. On iron pipe, both black and galvanized, the above discounts are increased to large jobbers by one point with supplementary discounts of 5 and 2 1/2%.

Note.—Chicago district mills have a base two points less than the above discounts. Chicago delivered base is 2 1/2 points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

## Boiler Tubes

### Base Discounts, f.o.b. Pittsburgh

Lap Welded Steel		Charcoal Iron	
2 to 2½ in.....	27	1½ in. ....	+18
2½ to 2¾ in.....	37	1¾ to 1 in. ....	+8
3 in.....	40	2 to 2½ in. ....	-2
3½ to 3¾ in.....	42½	2½ to 3 in. ....	-7
4 to 13 in.....	46	3½ to 4½ in. ....	-



look. Mills have filled up at a time when orders usually are dwindling, and because of the effect of hot weather on mill operations, there are only one or two makers who can guarantee deliveries before the end of September on production plate. The California crop of fruits and vegetables greatly exceeded expectations, and the shortage of tin plate there is acute. The time element is important in present demands because, whether for domestic or foreign account, they are based on food packing requirements and must be supplied promptly if at all. The surprising thing in the situation is that the urgency of the demand has not produced delivery premiums. The American Sheet & Tin Plate Co. lost little production as a result of last week's extreme heat, maintaining operations at more than 84 per cent by running its mills three turns on Saturday, but independent companies were not able to operate at more than 50 per cent for the week.

**Cold-Finished Steel Bars and Shafting.**—The automotive industry is doing better, and stronger demands from the parts makers for cold-finished steel bars are reflected both in the new buying and in releases against old contracts. The Ford Motor Co. last week closed for its August requirements. Individual orders still run rather small, and there is no evidence of an abandonment of close range buying by important consumers. Prices are steady at 2.50c., base Pittsburgh, for ordinary tonnages.

**Cold-Rolled Strips.**—There is still a price of 3.75c., base Pittsburgh, but 3.60c. is the more common price and that is not so low as is being done on some desirable accounts, the competition for which is extremely sharp. As low as 4.85c. is reported on cold-rolled strip fender stock. That compares with a nominal quotation of 5.15c., based on the usual differential over automobile body sheets. Low prices first were charged to sheet mill competition, but sheet makers state that they are holding on fender stock to the automobile body sheet base of 4.20c., plus 50c. per 100 lb. for crown fender stock and 75c. per 100 lb. for extra deep drawing fender stock.

**Hot-Rolled Flats.**—These products are notable more for their price steadiness than a really brisk demand. Orders are coming along steadily, but not in as heavy volume as last month, and several makers need orders, especially on the 10-in. mill sizes.

**Steel and Iron Bars.**—Specifications for steel bars are coming in very steadily and in good volume, notably from the makers of cold-finished steel bars, who are experiencing larger demands as the automobile industry gets into production on new models and steel requirements expand. Strictly new business is only fairly good. A price of 2.10c., base, still is noted on small stock orders, but generally the market is at 2c., base Pittsburgh, for carload lots. There has been no increase in the demand for iron bars, and prices are barely steady.

**Structural Steel.**—Demand for large structural shapes, as expressed by specifications, still is active, and with numerous structural jobs coming up calling for early delivery, current demands are of fair size with plenty of old business to work on. The mills

are firm at 2c. on small lots for early shipment.

**Plates.**—Mills in this and nearby districts are holding firmly at 1.90c., base Pittsburgh, and while that price rules on small lots, it does not seem to be subject to shading, even on fair-sized tonnages. Activity in the pipe market is helping plate mill operations, and many plates are moving to barge builders.

**Bolts, Nuts and Rivets.**—Steady demand for bolts and nuts is reported in this district, and with some makers orders are somewhat larger than in June. Prices are steady at levels established almost two years ago. The rivet market is irregular, with the base of \$2.60 per 100 lb., Pittsburgh, for large rivets subject to shading by as much as \$2 to \$3 a ton.

**Warehouse Business.**—The local warehouse price of galvanized sheets has dropped \$1 a ton to 5c., base, for lots of 25 bundles or more. There has been no change in other finishes of sheets, and warehouse prices generally are steady. Business is good for this season.

**Coke and Coal.**—Some furnace coke has come on the market as a result of the recent blast furnace suspensions and because furnaces that are in production are getting ample supplies against contract. The spot market is again quotable at from \$2.85 to \$3 per net ton at ovens, as against \$3 a week ago. What ordinarily would be regarded as a small supply of coke appears large because there is such a limited outlet. The prospect in the coal market is so good, however, that most producers have strong ideas as to prices on future shipments. There continues to be a good export demand for coal because of the British strike, but there is considerable caution about purchases because of the possibility of the termination of the strike, and this is keeping prices from advancing. Spot foundry coke still is quoted at from \$4 to \$4.50 per net ton at ovens.

**Old Material.**—Small sales of No. 1 railroad heavy melting steel, or its equivalent, have been made at \$17.25 and \$17.50, but steel manufacturers using the regular run of heavy melting steel continue to refrain from buying and efforts to obtain more than \$17 from them have not been successful. At the same time there seems to be none of this grade obtainable at less than \$17, and the market remains quotable, as for the past two weeks, at that figure. Dealers are firm because they believe that the sustained rate of steel works operation must mean the exhaustion of mill scrap stocks and a demand for fresh supplies. Most steel makers have supplies due them at lower prices and seek to avoid advancing the market by demanding deliveries. Dealers short of the market would bid up prices if called on to cover, and on the next demand the manufacturers would feel the effect of that stimulation of prices. It is an interesting contest between the mills and dealers, but in the meantime those who will take supplies are not having much trouble in getting fair-sized lots of heavy melting steel at \$17. The market is a little stronger on machine shop turnings, short shoveling steel turnings, heavy breakable cast and re-rolling rails, but weaker on the blast furnace grades.

We quote for delivery to consumer's mill in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

#### Warehouse Prices, f.o.b. Pittsburgh

	Base per Lb.
Tank plates .....	3.00c.
Structural shapes .....	3.00c.
Soft steel bars and small shapes .....	2.90c.
Reinforced steel bars .....	2.90c.
Black sheets (No. 28 gage), 25 or more bundles .....	4.00c.
Galvanized sheets (No. 28 gage), 25 or more bundles .....	5.00c.
Blue annealed sheets (No. 10 gage), 25 or more sheets .....	3.55c.
Cold-finished shafting and screw stock—	
Rounds and hexagons .....	3.60c.
Squares and flats .....	4.10c.
Bands .....	3.60c.
Spikes, large .....	3.30c.
Small .....	3.80c. to
Boat .....	3.80c.
Bolts, track .....	4.90c.
Wire, black soft annealed, base per 100 lb. ....	\$3.00
Wire, galvanized soft, base per 100 lb. ....	3.00
Common wire nails, per keg .....	3.00
Cement coated nails .....	3.05

Per Gross Ton	
Heavy melting steel .....	\$17.00
No. 1 cast, cupola size .....	\$16.00 to 16.50
Rails for rolling, Newark and Cambridge, Ohio; Cumberland, Md.; Huntington, W. Va., and Franklin, Pa. ....	17.50 to 18.00
Compressed sheet steel .....	15.50 to 16.00
Bundled sheets, sides and ends .....	14.50 to 15.00
Railroad knuckles and couplers .....	18.50 to 19.00
Railroad coil and leaf springs .....	18.50 to 19.00
Low phosphorus blooms and billet ends .....	21.00 to 21.50
Low phosphorus mill plates .....	20.50 to 21.00
Low phosphorus miscellaneous .....	18.50 to 19.00
Low phosphorus punchings .....	18.50 to 19.00
Steel car axles .....	21.00 to 21.50
Cast iron wheels .....	16.50 to 17.00
Rolled steel wheels .....	18.50 to 19.00
Machine shop turnings .....	12.00 to 12.50
Short shoveling turnings .....	13.25 to 13.75
Sheet bar crops .....	19.00 to 20.00
Heavy steel axle turnings .....	15.00 to 15.50
Short mixed borings and turnings .....	12.00 to 12.50
Heavy breakable cast .....	15.50 to 16.00
Cast iron borings .....	12.00 to 12.50
No. 1 railroad wrought .....	13.00 to 13.50
No. 2 railroad wrought .....	17.00
Railroad or automobile malleable scrap .....	18.00 to 18.50

# Semi-Finished Steel, Raw Materials, Bolts and Rivets

## Mill Prices of Semi-Finished Steel

F. o. b. Pittsburgh or Youngstown

### Billets and Blooms

	Per Gross Ton
Rolling, 4-in. and over.....	\$35.00
Rolling, 2-in. and smaller.....	36.00
Forging, ordinary .....	40.00
Forging, guaranteed .....	45.00

### Sheet Bars

	Per Gross Ton
Open-hearth or Bessemer.....	\$36.00

### Slabs

	Per Gross Ton
8 in. x 2 in. and larger.....	\$35.00
6 in. x 2 in. and smaller.....	36.00

### Skelp

	Per Lb.
Grooved .....	1.90c.
Sheared .....	1.90c.
Universal .....	1.90c.

### Wire Rods

	Per Gross Ton
*Common soft, base.....	\$45.00
Screw stock .....	\$5.00 per ton over base
Carbon 0.20% to 0.40%..	3.00 per ton over base
Carbon 0.41% to 0.55%..	5.00 per ton over base
Carbon 0.56% to 0.75%..	7.50 per ton over base
Carbon over 0.75%.....	10.00 per ton over base
Acid .....	15.00 per ton over base

\*Chicago mill base is \$46. Cleveland mill base, \$45.

## Prices of Raw Materials

### Ores

Lake Superior Ores, Delivered Lower Lake Ports

	Per Gross Ton
Old range Bessemer, 51.50% iron.....	\$4.55
Old range non-Bessemer, 51.50% iron.....	4.40
Mesabi Bessemer, 51.50% iron.....	4.40
Mesabi non-Bessemer, 51.50% iron.....	4.25
High phosphorus, 51.50% iron.....	4.15
Foreign Ore, c.i.f. Philadelphia or Baltimore	

	Per Unit
Iron ore, low phos., copper free, 55 to 58% iron in dry Spanish or Algerian..	9.50c. to 10c.
Iron ore, Swedish, average 66% iron.....	9.50c.
Manganese ore, washed, 51% manganese, from the Caucasus.....	42c.
Manganese ore, Brazilian or Indian, nominal .....	42c. to 44c.
Tungsten ore, high grade, per unit, in 60% concentrates .....	\$11.75 to \$12.50

	Per Ton
Chrome ore, Indian basic, 48% Cr <sub>2</sub> O <sub>3</sub> , crude, c.i.f. Atlantic seaboard.....	\$22.00 to \$23.00

	Per Lb.
Molybdenum ore, 85% concentrates of MoS <sub>2</sub> , delivered .....	55c. to 60c.

### Coke

	Per Net Ton
Furnace, f.o.b. Connellsville prompt .....	\$2.85 to \$3.00
Foundry, f.o.b. Connellsville prompt .....	4.00 to 4.50
Foundry, by-product, Ch'go ovens .....	9.75
Foundry, by-product, New England, del'd .....	12.00
Foundry, by-product, Newark or Jersey City, delivered.....	9.75 to 10.77
Foundry, Birmingham .....	5.50 to 6.00
Foundry, by-product, St. Louis or Granite City .....	10.00

### Coal

	Per Net Ton
Mine run steam coal, f.o.b. W. Pa. mines .....	\$1.40 to \$1.75
Mine run coking coal, f.o.b. W. Pa. mines .....	1.50 to 1.75
Mine run gas coal, f.o.b. Pa. mines .....	1.85 to 2.00
Steam slack, f.o.b. W. Pa. mines .....	1.10 to 1.20
Gas slack, f.o.b. W. Pa. mines....	1.20 to 1.30

### Ferromanganese

	Per Gross Ton
Domestic, 80%, furnace or seab'd.....	\$88.00 to \$95.00
Foreign, 80%, Atlantic or Gulf port, duty paid .....	88.00

### Spiegeleisen

	Per Gross Ton Furnace
Domestic, 19 to 21% .....	\$32.00 to \$34.00
Domestic, 16 to 19% .....	31.00 to 33.00

### Electric Ferrosilicon

	Per Gross Ton Delivered
50% .....	\$85.00 to \$87.50
75% .....	145.00 to 150.00

	Per Gross Ton Furnace
10% .....	\$42.00
11% .....	42.00
12% .....	\$42.00
14 to 16% .....	\$45 to 46.00

### Bessemer Ferrosilicon

	Per Gross Ton
F.o.b. Jackson County, Ohio, Furnace .....	
10% .....	\$33.00
11% .....	35.00
12% .....	\$37.00

### Silvery Iron

	Per Gross Ton
F.o.b. Jackson County, Ohio, Furnace .....	
6% .....	\$25.50
7% .....	26.50
8% .....	27.50
9% .....	29.00

### Other Ferroalloys

Ferrotungsten, per lb. contained metal, del'd .....	\$1.05 to \$1.20
Ferrochromium, 4% carbon and up, 60 to 70% Cr., per lb. contained Cr. delivered .....	11.50c.
Ferrovandium, per lb. contained vanadium, f.o.b. furnace .....	\$3.25 to \$4.00
Ferrocobaltititanium, 15 to 18%, per net ton, f.o.b. furnace, in carloads.....	\$200.00
Ferrophosphorus, electric or blast furnace material, in carloads, 18%, Rockdale, Tenn., base, per net ton.....	\$91.00
Ferrophosphorus, electric, 24%, f.o.b. An-niston, Ala., per net ton.....	\$122.50

### Fluxes and Refractories

#### Fluorspar

	Per Net Ton
Domestic, 85% and over calcium fluoride, not over 5% silica, gravel, f.o.b. Illinois and Kentucky mines.....	\$18.00
No. 2 lump, Illinois and Kentucky mines.....	\$20.00
Foreign, 85% calcium fluoride, not over 5% silica, c.i.f. Atlantic port, duty paid, .....	\$17.50 to \$17.75
Domestic, No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2 1/4% silica, f.o.b. Illinois and Kentucky mines.....	\$32.50

#### Fire Clay

	Per 1000 f.o.b. Works
	High Duty Moderate Duty
Pennsylvania .....	\$40.00 to \$43.00 \$38.00 to \$40.00
Maryland .....	43.00 to 46.00 38.00 to 40.00
New Jersey .....	55.00 to 75.00
Ohio .....	40.00 to 43.00 38.00 to 40.00
Kentucky .....	40.00 to 43.00 38.00 to 40.00
Illinois .....	40.00 to 43.00 35.00 to 38.00
Missouri .....	40.00 to 43.00 35.00 to 38.00
Ground fire clay, per ton.....	6.50 to 7.50

#### Silica Brick

	Per 1000 f.o.b. Works
Pennsylvania .....	\$40.00
Chicago .....	49.00
Birmingham .....	50.00
Silica clay, per ton.....	\$8.00 to 9.00

#### Magnesite Brick

	Per Net Ton
Standard size, f.o.b. Baltimore and Chester, Pa. ....	\$65.00
Grain magnesite, f.o.b. Baltimore and Chester, Pa. ....	40.00

#### Chrome Brick

	Per Net Ton
Standard size .....	\$45.00 to \$48.00

## Mill Prices of Bolts, Nuts, Rivets and Set Screws

### Bolts and Nuts

(Less-than-Carload Lots)

(F.o.b. Pittsburgh, Cleveland, Birmingham and Chicago)

	Per Cent Off List
Machine bolts, small, rolled threads.....	60 and 10
Machine bolts, all sizes, cut threads.....	50, 10 and 10
Carriage bolts, smaller and shorter, rolled threads .....	50, 10 and 10
Carriage bolts, cut threads, all sizes.....	50 and 10
Eagle carriage bolts.....	65 and 10
Lag bolts .....	60, 10 and 10
Plow bolts, Nos. 3 and 7 heads.....	50 and 10
(Extra of 20% for other style heads)	
Machine bolts, c.p.c. and t. nuts, 1/2 x 4 in., 45, 10 and 5 .....	45, 10 and 5
Larger and longer sizes.....	45, 10 and 5
Bolt ends with hot-pressed nuts.....	50, 10 and 10
Bolt ends with cold-pressed nuts.....	45, 10 and 5
Hot-pressed nuts, blank and tapped, square, 4.00c. per lb. off list .....	
Hot-pressed nuts, blank or tapped, hexagons, 4.40c. per lb. off list .....	
C.p.c. and t. square or hex. nuts, blank or tapped .....	4.10c. per lb. off list
Washers* .....	6.50c. to 6.25c. per lb. off list

\*F.o.b. Chicago and Pittsburgh.  
The discount on machine, carriage and lag bolts is 5 per cent more than above for car lots. On hot-pressed and cold-punched nuts the discount is 25c. more per 100 lb. than quoted above for car lots.

### Bolts and Nuts

(Quoted with actual freight allowed up to but not exceeding 50c. per 100 lb.)

	Per Cent Off List
Semi-finished hexagon nuts:	
1/2 in. and smaller, U. S. S.....	80, 10 and 5
3/4 in. and larger, U. S. S.....	75, 10 and 5
Small sizes, S. A. E.....	80, 10, 10 and 5
S. A. E., 1/2 in. and larger.....	75, 10, 10 and 5
Stove bolts in packages.....	80, 10 and 5
Stove bolts in bulk.....	80, 10, 5 and 2 1/2
Tire bolts .....	60 and 5

### Semi-Finished Castellated and Slotted Nuts

(Actual freight allowed up to but not exceeding 50c. per 100 lb.)

(To jobbers and consumers in large quantities)

	Per 100 Net S.A.E. U.S.S.	Per 100 Net S.A.E. U.S.S.
1/2-in.....	\$0.44 \$0.44	3/4-in..... \$2.35 \$2.40
3/4-in.....	0.515 0.515	1-in..... 3.60 3.60
1-in.....	0.62 0.66	1 1/4-in..... 5.65 5.80
1 1/4-in.....	0.79 0.90	1 1/2-in..... 8.90 8.90
1 1/2-in.....	1.01 1.05	1 3/4-in..... 12.60 13.10
1 3/4-in.....	1.39 1.42	2-in..... 18.35 18.35
2-in.....	1.70 1.73	2 1/2-in..... 21.00 21.00

Larger sizes.—Prices on application.

### Large Rivets

	Base Per 100 Lb.
F.o.b. Pittsburgh .....	\$2.50 to \$2.60
F.o.b. Cleveland .....	2.70
F.o.b. Chicago .....	2.75

### Small Rivets

	Per Cent Off List
F.o.b. Pittsburgh .....	70 and 10
F.o.b. Cleveland .....	70 and 10
F.o.b. Chicago .....	70, 10 and 5 to 70 and 10

### Cap and Set Screws

(Freight allowed up to but not exceeding 50c. per 100 lb.)

	Per Cent Off List
Milled cap screws.....	80 and 10
Milled standard set screws, case hardened, .....	80 and 5
Milled headless set screws, cut thread.....	50
Upset hex. head cap screws, U. S. S. thread, .....	80, 10 and 10
Upset hex. cap screws, S.A.E. thread, .....	80, 10 and 10
Upset set screws.....	80, 10 and 5
Milled studs .....	70 and 5



## Chicago

### Steel Output at 86 Per Cent with New Commitments Large—Scrap Weakens

CHICAGO, July 27.—Ingot production in the Chicago district has been maintained thus far in July at 86 to 87 per cent, which is approximately the rate during the latter part of June. Specifications for the week show further gains on shipments, and the trade believes that this relation will remain true when total figures for the month are available. Sales have slowly expanded throughout July, and this week are approximately equal to shipments. In fact, both sales and specifications for the seven-day period now closing are the largest for any like period within the last two months. Producers lay stress on the fact that specifications are widely diversified both as to product and to source. As a general rule, users do not as yet see fit to build up stocks, and purchases continue on a hand-to-mouth basis.

Reports of railroad equipment buying to come late in the summer are persistent, and this week an inquiry for 2000 refrigerator cars has come before the trade. Car building programs which got under way during the spring and early summer are rapidly approaching completion, and it is feared that most of the freight car shops in this territory will be forced to close down in September because of lack of work. This seems almost inevitable because even if considerable new business should come before the trade now, it is doubtful whether new construction could get under way before the completion of existing contracts.

Structural awards are light, but new projects, including 8000 tons for a bank in Chicago, bulk large in the aggregate.

**Pig Iron.**—Market activity is limited largely to a few users of malleable who did not cover during the recent buying movement and are now making known their third quarter requirements. On the whole, the price situation is steady at \$21, furnace, for No. 2 foundry, and a few scattered carlot sales are reported at \$21.50. A melter in central Illinois is in the market for 1000 tons of foundry iron for delivery over the remainder of the year. The melt in this territory is heavy, and users of pig iron in some cases are pressing makers for delivery. The rate of shipments remains as during the previous week, but the average for July is running slightly ahead of that for June. Deliveries during the first six months of this year were heavier than during any six-month period in the history of the Chicago trade, and shipments for the 12-month period ended July 1 also established a record. Spot buying is more active, but it is generally believed that third quarter requirements are well covered by contract. The trade estimates that fully one-third of the tonnage placed during the recent buying movement was coverage for the remaining six months of the year.

Quotations on Northern foundry high phosphorus and malleable iron are f.o.b. local furnace, and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards:

Northern No. 2 foundry, sil. 1.75 to 2.25 .....	\$21.00
Northern No. 1 foundry, sil. 2.25 to 2.75 .....	21.50
Malleable, not over 2.25 sil. ....	21.00
High phosphorus .....	\$21.00 to 21.50
Lake Superior charcoal, averaging sil. 1.50, delivered at Chicago .....	29.04
Southern No. 2 (all rail) .....	27.01
Southern No. 2 (barge and rail) .....	25.18
Low phos., sil. 1 to 2 per cent, copper free .....	29.50 to 30.00
Silvery, sil. 8 per cent. ....	32.29
Bessemer ferrosilicon, 14 to 15 per cent .....	45.79

**Ferroalloys.**—Specifications for ferrosilicon are being received at an undiminished rate, but no sales are reported, since users are well covered by contract for the remainder of the year. Ferromanganese is quiet, and quotations are unchanged at \$88, seaboard. Spiegeleisen has gained strength, and several sales of the 17 to 19 per cent grade have been made at \$33, Haz-

ard, Pa., or \$40.76, delivered. The 19 to 21 per cent material is difficult to obtain, although a small tonnage of that grade in foreign metal, which was offered at \$35, seaboard, remains untaken.

We quote 80 per cent ferromanganese, \$95.56, delivered Chicago; 50 per cent ferrosilicon, \$85, delivered; spiegeleisen, 18 to 22 per cent, \$41.76, delivered Chicago.

**Plates.**—Approximately 20,000 tons of plates, shapes and bars will be required for 2000 refrigerator cars now on inquiry by the American Refrigerator Transit Co. This is the first important equipment inquiry to appear for some time, but it is believed by the steel trade that a substantial car buying movement will get under way during the early part of September. The Chicago Great Western inquiry for 500 cars is active. Users of large oil storage tanks are again in the market, and fresh tank inquiries total over 10,000 tons. Specifications from carbuilders for work on hand have tapered down materially, but shipping orders for plates from tank makers are in good volume. During the past week specifications from all classes of users exceeded shipments. Deliveries range from three weeks for sheared plates to six weeks on the universal mill product. Prices are firm.

The mill quotation on plates is 2.10c. per lb., base, Chicago.

**Structural Material.**—The continued lack of car buying has permitted mills to meet demands for prompt delivery, and consequently fabricators have not cared to build up stocks. Structural lettings for the week are light, emphasizing the unfavorable situation at the shops. A substantial amount of large work let earlier in the summer is keeping some plants busy, but schedules cannot be arranged to the best advantage without a sprinkling of small-tonnage contracts. As a rule, the larger jobs have gone to those plants which are best suited to fabricate them, and the small contracts have been widely scattered.

The mill quotation on plain material is 2.10c. per lb. base, Chicago.

**Bars.**—For the seven-day period now closing both specifications and sales of soft steel bars were the heaviest for any week in several months. Sales so far this month exceed shipments, and as the end of July approaches, this tendency is growing more pronounced. Deliveries are somewhat dependent upon rollings, but the average is about six weeks. The iron bar market is quieter than during the early part of the month, although the price remains steady at 2c., Chicago. Current orders and specifications are coming largely from the railroads, although farm implement makers are beginning to show interest in the market. Prices of alloy steel bars are steady, and the demand is well sustained. Operations of rail steel bar makers continue heavy, although output suffered somewhat during the hot spell of the last week. Specifications so far in July have been received at about the same rate as during June, and they are approximately equal to shipments. Mills are having little difficulty in arranging rolling schedules, since at this season they customarily work in rollings of fence post sections for stock against the fall demand.

Mill prices per lb. are: Mild steel bars, 2.10c., base, Chicago; common bar iron, 2c., base, Chicago; rail steel bars, 2c., base, Chicago.

**Rails and Track Supplies.**—The Gary mills have completed another 16,000-ton week, but it is evident now that the spring contracts are well filled and that the rate of rolling will begin to taper off. No large rail orders were entered during the week, although a number of railroads have placed lots of 500 tons to 2500 tons each for prompt delivery. A full complement of track accessories will accompany these orders. It is reported here that the major portion of the recent rail order placed by the Norfolk & Western will be scheduled for rolling during the fall months.

Standard Bessemer and open-hearth rails, \$43; light rails, rolled from billets, \$36 to \$38 per gross ton, f.o.b. maker's mill.

Standard railroad spikes, 2.90c. per lb. mill; track bolts with square nuts, 3.90c. mill; steel tie plates, 2.25c. to 2.35c. mill; angle bars, 2.75c. mill.



**Sheets.**—Specifications for the week are practically double shipments. Operations are being held steady at the average for the past few weeks, and mills are disposed to let order books expand rather than increase output either to meet the increased demand or to offset the cut in production resulting from the hot weather. Prices are unchanged.

Chicago delivered prices from mill are 3.30c. for No. 28 black; 2.45c. for No. 10 blue annealed; 4.45c. for No. 28 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

**Cast Iron Pipe.**—Approximately 4000 tons of cast iron pipe has been placed in this market during the week by a number of the smaller municipalities. At the same time orders of carlot proportions are numerous. Prices are gaining in strength, and the quotations of \$49.20 to \$50.20, delivered Chicago, are steady. Newark, Ohio, is readvertising for 800 tons of 6 and 8-in. Mundelein, Ill., will soon ask for prices on 300 tons, and Waterville, Ohio, will open bids July 28 on 500 tons of 4, 6 and 8-in. Class B pipe. Cuyahoga Falls, Ohio, is in the market for 1000 tons of 4, 6 and 8-in.

The following awards have been made:

Alliance, Ohio, 100 tons of 6, 8 and 10-in. to James B. Clow & Sons.  
Waukegan, Ill., 750 tons, 6, 8 and 12-in., Class B, to James B. Clow & Sons.  
Carbondale, Ill., 1600 tons, 2 to 12-in., Class B, to the United States Cast Iron Pipe & Foundry Co.  
Half-Way, Mich., 730 tons, 6 and 8-in., Class B, to the National Cast Iron Pipe Co.  
Oblong, Ill., 800 tons, to the United States Cast Iron Pipe & Foundry Co.  
Fond du Lac, Wis., 250 tons, to the United States Cast Iron Pipe & Foundry Co.

We quote per net ton, delivered, Chicago, as follows: Water pipe, 4-in., \$52.20 to \$53.20; 6-in. and over, \$48.20 to \$49.20; Class A and gas pipe, \$4 extra.

**Wire Products.**—Demand has broadened out considerably and July will probably prove to be the best month for the mills since last October. The greatest improvement in demand is from jobbers. Their stocks are still low, and the present buying movement largely reflects an increase in current consumption. Business in wire nails is good, and one maker operated full last week in order to meet the requirements of customers. Woven wire fencing is moving slowly, but makers believe that fall buying, which will open within the next three or four weeks, will bring about a revival of interest in this commodity. Throughout the central portion of the country crop reports are more favorable, following a stretch of warm weather and general rains, and this is regarded as an assurance that buying later in the year will be in good volume. Specifications from the manufacturing trade are substantial, being at about the rate which has been maintained throughout the month. On the whole, the

wire industry is enjoying a larger volume of business this July than it did a year ago at this time, and 1926 to date is averaging well above the first seven months of 1925. Mill prices, which are shown on page 307, are steady.

**Reinforcing Bars.**—Lettings during the week have been in good number, although most of them were small. A 1000-ton rail steel project was closed in central Illinois, and three contracts, aggregating 900 tons, have been placed in Wisconsin. Shipments from warehouses are not so heavy as had been anticipated by dealers, who based their estimates of business upon the activity in architectural offices. Fresh inquiry is in good volume, although awards are slow in being placed. The price situation is weak, and 2.40c. is more nearly the average price on sizable tonnages of billet bars than is 2.50c. On small tonnages 2.60c. and 2.75c. are still being obtained. Awards and inquiries are shown on page 322.

**Bolts, Nuts and Rivets.**—Demand for large rivets is good, but makers are having some difficulty in holding to the price of \$2.75, base per 100 lb., Chicago. Specifications for bolts and nuts are heavier than a week ago and discounts are firm.

**Coke.**—This market is firm, and shipments for July are averaging better than during June. By-product foundry coke is quoted at \$9.75, ovens, or \$10.25, delivered.

**Old Material.**—The resistance of buyers to the rise in scrap is having its effect, and prices after coming to virtually a standstill last week are now leaning decidedly toward the weaker side. Large users of heavy melting steel are inactive, and although no actual sales to consumers are reported, dealers are freely trading in this grade at \$14 per gross ton delivered. Reports of heavy melting steel having been shipped by water from the immediate Chicago territory are unfounded, but for some weeks a large user at Buffalo has been making shipments from Duluth. This has attracted the attention of the local trade, and there is a move on here to make Chicago a loading point for shipments to the East. The trade has it that prices paid at Duluth were not far from those which prevailed in this market at the time of shipment. The local demand for practically all grades of scrap is light, and quotations in many cases are below the level of a week ago.

We quote delivered in consumers' yards, Chicago and vicinity, all freight and transfer charges paid for all items except relaying rails, including angle bars to match, which are quoted f.o.b. dealers' yards:

#### Per Gross Ton

Heavy melting steel.....	\$14.00 to \$14.50
Frogs, switches and guards, cut apart, and miscellaneous rails.....	16.00 to 16.50
Shoveling steel.....	14.00 to 14.50
Hydraulic compressed sheets.....	12.50 to 13.00
Drop forge flashings.....	9.50 to 10.00
Forged, cast and rolled steel car wheels.....	18.00 to 18.50
Railroad tires, charging box size.....	18.50 to 19.00
Railroad leaf springs, cut apart.....	18.50 to 19.00
Steel couplers and knuckles.....	17.50 to 18.00
Coil springs.....	18.50 to 19.00
Low phosph. punchings.....	17.00 to 17.50
Axle turnings, foundry grade.....	14.50 to 15.00
Axle turnings, blast fur. grade.....	12.50 to 13.00
Relaying rails, 56 to 60 lb.....	25.50 to 26.50
Relaying rails, 65 lb. and heavier.....	26.00 to 31.00
Rerolling rails.....	17.00 to 17.50
Steel rails, less than 3 ft.....	17.50 to 18.00
Iron rails.....	14.50 to 15.00
Cast iron borings.....	11.25 to 11.75
Short shoveling turnings.....	11.25 to 11.75
Machine shop turnings.....	7.25 to 7.75
Railroad malleable.....	17.75 to 18.25
Agricultural malleable.....	15.50 to 16.00
Angle bars, steel.....	16.25 to 16.75
Cast iron car wheels.....	16.00 to 16.50

#### Per Net Ton

No. 1 machinery cast.....	17.00 to 17.50
No. 1 railroad cast.....	16.25 to 16.75
No. 1 agricultural cast.....	16.25 to 16.75
Stove plate.....	14.50 to 15.00
Grate bars.....	14.25 to 14.75
Brake shoes.....	13.75 to 14.25
Iron angle and splice bars.....	14.00 to 14.50
Iron arch bars and transoms.....	20.00 to 20.50
Iron car axles.....	24.00 to 24.50
Steel car axles.....	17.50 to 18.00
No. 1 railroad wrought.....	13.50 to 14.00
No. 2 railroad wrought.....	12.50 to 13.00
No. 1 busheling.....	11.50 to 12.00
No. 2 busheling.....	7.50 to 8.00
Locomotive tires, smooth.....	17.00 to 17.50
Pipes and flues.....	10.00 to 10.50

#### Warehouse Prices, f.o.b. Chicago

	Base per Lb.
Plates and structural shapes.....	3.10c.
Mild steel bars.....	3.00c.
Reinforcing bars, billet steel.....	2.60c.
Cold-finished steel bars and shafting—	
Rounds and hexagons.....	3.60c.
Flats and squares.....	4.10c.
Hoops.....	4.15c.
Bands.....	3.65c.
No. 28 black sheets.....	4.10c.
No. 10 blue annealed sheets.....	3.50c.
No. 28 galvanized sheets.....	5.25c.
Standard railroad spikes.....	3.55c.
Track bolts.....	4.55c.
Structural rivets.....	3.50c.
Boiler rivets.....	3.70c.

#### Per Cent Off List

Machine bolts.....	50 and 5
Carriage bolts.....	47½
Coach or lag screws.....	55 and 5
Hot-pressed nuts, square, tapped or blank,	3.25c. off per lb.
Hot-pressed nuts, hexagons, tapped or blank,	3.75c. off per lb.
No. 8 black annealed wire, per 100 lb.....	\$3.30
Common wire nails, base, per keg.....	3.05
Cement coated nails, base, per keg.....	3.05

## Cleveland

### Automotive Industry Buys—Galvanized Sheets Weaker—Advances in Scrap

CLEVELAND, July 27.—Orders for finished steel are holding up well, and the total volume of business in July will exceed expectations, as many had looked for a slowing down the latter part of this month. Most mills have their trade well covered with contracts, and their orders are almost entirely in specifications against contracts. Buying by the automotive industry in Michigan has been more active the past week, some round-lot business in sheets and cold-rolled strip steel having been placed. One leading car builder purchased only for a month's requirements. Some of the automobile companies that have brought out new models have increased production, and the industry as a whole is reported to be keeping up to recent output.

The Wabash Railway has placed a car ferry for the Ann Arbor line with the Toledo Shipbuilding Co., and an inquiry from this road for two more car ferries is pending. The boat ordered will require 2700 tons of steel, which have been placed with a Pittsburgh district plant. In the structural field considerable activity has developed in bridge work. An Ohio fabricator has taken four highway and railroad bridges, aggregating over 2000 tons, and two Ohio River bridges, planned by private companies and requiring 11,400 tons of steel, are expected to be placed shortly.

The only important development in the price situation is weakness in cold-rolled strip steel. Steel bars and structural material are firm at 2c., Pittsburgh, and efforts to get 2.10c. for small lots have virtually disappeared. Plates are steady at 1.90c., Pittsburgh.

**Pig Iron.**—There is still a fair volume of scattered buying, but very little business is now coming from the northern Ohio territory. Cleveland interests sold about 25,000 tons in foundry and malleable iron during the week, largely in the Detroit and Buffalo territories. Some new inquiry is coming up for the fourth quarter, but consumers are showing resistance to paying any more for that delivery than they did a few weeks ago for third quarter iron, although some of the Lake furnaces are trying to get slightly higher prices. While Cleveland producers are asking \$18.50, furnace, for outside shipment, a price of \$18 does not seem to have disappeared to points where Valley competition has to be met. Many consumers who recently bought for the entire last half, and some furnaces that have not yet opened their books for the fourth quarter can take on considerable business for that delivery. Although there are reports of Valley quotations as low as \$17.50, furnace, the more common price is \$18, and some furnaces that are holding to \$18.50 are only able to make small-lot sales. For Cleveland delivery the ruling price is unchanged at \$19, furnace. In Michigan the recent range of \$19 to \$19.50, furnace, is being maintained. Inquiries include one for 3000 tons from an Indiana melter and another for 400 tons from a Mansfield, Ohio, consumer. The demand for merchant basic iron in this territory will be curtailed by the blowing in of the new furnace of the Central Alloy Steel Corporation, Massillon. The Central Steel Co. has bought all of its pig iron in the open market and the United Alloy Steel Corporation, Canton, has purchased from 15,000 to 20,000 tons of basic iron per quarter. With the new furnace operating, it is expected that more iron will be produced at Massillon than the Central plant will re-

quire, and that the surplus will be shipped to the Canton plant, so that the pig iron purchases for the United Alloy plant will be much smaller than they have been. The Hanna Furnace Co. blew out its Dover furnace at Dover, Ohio, this week.

Quotations below, except on basic and low phosphorus iron, are delivered Cleveland, and for local iron include a 50c. switching charge. Ohio silvery and Southern iron prices are based on a \$3.02 freight rate from Jackson and \$6.01 from Birmingham:

Basic, Valley furnace.....	\$17.50
N'th'n No. 2 fdy., sil. 1.75 to 2.25.....	19.50
Southern fdy., sil. 1.75 to 2.25.....	\$26.51 to 27.01
Malleable .....	19.50
Ohio silvery, 8 per cent.....	30.52
Standard low phos., Valley furnace .....	27.50

**Iron Ore.**—A few sales in lots of around 2000 tons for fill-in purposes are reported. While leading producers are holding to regular prices on most grades, it is probable that some producers who have ore that they are anxious to move would be willing to make concessions.

**Sheets.**—The improvement in demand previously reported is holding up, and prices stay at about the levels they have maintained for the past month. While black sheets can still be bought at 3c., Pittsburgh, some good business was taken during the week at 3.05c. On blue annealed sheets quotations of 2.25c., Pittsburgh, and 2.30c., Ohio mill, are appearing. There is not much strength to the galvanized sheet market, and some Ohio mills are going to 4.20c., mill. There are unconfirmed reports that a Detroit automobile builder has been able to secure concessions on automobile body sheets by turning to some new sources of supply. However, another car builder has placed a round tonnage at the regular price of 4.20c.

**Strip Steel.**—Orders from the automotive industry for cold-rolled strip steel have improved, and some of the mills have more business on their books than for several weeks. However, keen competition has brought a further weakening in the price, which has dipped \$2 more a ton below the price of 3.50c., Cleveland and Pittsburgh, which has been prevailing for round lots. There are unconfirmed reports that a Detroit car builder bought at as low as 3.25c. Tube stock, which usually sells at \$5 a ton below ordinary stock, has settled down to 3.25c. Shading to 4.85c. is reported on fender stock. Hot-rolled strip steel is firm at regular quotations.

**Reinforcing Bars.**—Demand has become more active. Bids have been taken on 800 tons for a bridge at Girard, Ohio, and an inquiry is out for 400 tons for a Cleveland factory building. On round lots of billet steel bars 1.90c. per lb., Pittsburgh, is still appearing. Rail steel bars are quoted at 1.80c. per lb., mill, for carlots.

**Alloy Steel.**—New demand from the automotive industry is light, and while the market is untested prices appear to be holding to recent levels.

**Bolts, Nuts and Rivets.**—The demand for bolts and nuts is steady and about normal for July. Prices are firm. While some shading has been reported recently on large rivets, it is stated that this has been confined mostly to car rivets. The Champion Rivet Co., Cleveland, has been awarded by the Bureau of Supplies and Accounts, Navy Department, Washington, 150 tons of medium steel and 20 tons of high tensile steel rivets for the Brooklyn Navy Yard and 108 tons of medium and high tensile steel rivets for delivery at various other yards.

**Coke.**—The price of Painesville by-product foundry coke has been fixed at \$7.50, ovens, for August shipment, the same price that prevailed this month. Connelville foundry coke is unchanged at \$4 to \$5.25, ovens. Demand is light.

**Semi-Finished Steel.**—Mills are getting a good volume of specifications, but no new sales are reported. Prices are firm at \$36, Cleveland and Youngstown, for sheet bars and \$35 for slabs and large billets.

**Warehouse Business.**—Sales are fair, with the volume of business about the same as in June. Outside of some irregularity in sheets, prices are firm.

#### Warehouse Prices, f.o.b. Cleveland

	Base per Lb.
Plates and structural shapes.....	3.00c.
Mild steel bars.....	3.00c.
Cold-finished rounds and hexagons.....	3.90c.
Cold-finished flats and squares.....	4.40c.
Hoops and bands.....	3.65c.
No. 28 black sheets.....	3.50c. to 3.85c.
No. 10 blue annealed sheets.....	3.15c.
No. 28 galvanized sheets.....	4.70c. to 5.00c.
No. 9 annealed wire, per 100 lb.....	\$3.00
No. 9 galvanized wire, per 100 lb.....	3.45
Common wire nails, base, per keg.....	3.00



**Old Material.**—A Cleveland mill during the week bought about 8000 tons of heavy melting steel and blast furnace scrap, paying \$15.40 for No. 1 heavy melting, \$14.90 for No. 2, and \$12.40 for blast furnace borings and turnings. Dealers are buying to cover against these orders at 40c. lower for each grade than the mill paid. These are the only grades active. Present dealers' prices on heavy melting steel and blast furnace scrap are about 50c. a ton higher than a week ago. The last previous sale of heavy melting steel scrap to a Cleveland mill early in June was at \$14.75. Outside of a stiffening on these grades, the price situation shows little change. Dealers are finding it difficult to do business, contending that they have to pay more for scrap than mills are willing to pay. Automobile companies of Michigan have issued August scrap lists, offering tonnages as follows: Dodge Brothers, Inc., 5000 tons; Buick Motor Car Co., 7000 tons; Chevrolet Motor Car Co., 4000 tons; Chrysler Corporation, 1850 tons.

We quote per gross ton delivered consumers' yards in Cleveland:

Heavy melting steel.....	\$14.75 to \$15.00
Rails for rolling.....	16.25 to 16.50
Rails under 3 ft.....	17.00 to 17.50
Low phosphorus billet, bloom and slab crops.....	18.00 to 18.50
Low phosphorus sheet bar crops.....	18.25 to 18.75
Low phosphorus plate scrap.....	18.00 to 18.50
Low phosphorus forging crops.....	16.75 to 17.25
Cast iron borings.....	11.75 to 12.00
Machine shop turnings.....	10.50 to 10.75
Mixed borings and short turnings.....	11.75 to 12.00
Compressed sheet steel.....	13.00 to 13.25
No. 1 railroad wrought.....	11.50 to 12.00
No. 2 railroad wrought.....	13.75 to 14.25
Railroad malleable.....	18.00 to 18.50
Light bundled sheet stampings.....	11.25 to 11.75
Steel axle turnings.....	12.50 to 13.00
No. 1 cast.....	16.50 to 17.00
No. 1 busheling.....	12.00 to 12.50
No. 2 busheling.....	11.75 to 12.00
Drop forge flashings, 15 in. and under.....	11.50 to 12.00
Railroad grate bars.....	12.50 to 13.00
Stove plate.....	12.50 to 13.00
Pipes and flues.....	10.00 to 10.50

## New York

### Export Demand for Sheets—Pig Iron Market Less Active

NEW YORK, July 27.—Reduced activity in the pig iron market is reflected both in sales and fresh inquiries. Sales by local brokers during the week are estimated at between 13,000 and 14,000 tons, while new prospective business for delivery in this district probably does not total more than 9000 tons. The largest new inquiry comes from the Burnham Boiler Corporation, Irvington, N. Y., and calls for 3700 tons of No. 2 plain and No. 2X foundry iron for the third and fourth quarters. Of this total 1200 tons is for shipment to Irvington, 1000 tons is for the Elizabeth, N. J., plant, and 1500 tons for Lancaster, Pa. A Connecticut melter is in the market for 500 to 2000 tons of foundry iron for third and fourth quarters. Another inquiry is current for 1500 tons of special analysis iron. The General Electric Co., Schenectady, N. Y., is reported to have closed for 800 tons of foundry for Elmira, N. Y., but is still in the market for 350 tons of No. 1 and higher silicon iron for Bayway, N. J., and has put out a fresh inquiry for 500 tons of foundry for Lynn, Mass. The Louis Sacks Iron Foundry, Newark, has placed 400 tons of malleable and 500 tons of No. 2X foundry iron with eastern Pennsylvania producers. German foundry iron is still offered at \$20 to \$20.50, duty paid port of entry, but this material will probably advance since importers are being asked higher prices following a stiffening of the Continental fuel market. Imported iron, however, is no longer a serious factor in this district, with domestic iron delivered by barge at \$20.75 and in some cases a shade lower. There is also keen competition among domestic producers on all-rail shipments, but base prices at furnace do not appear to have gone below \$18, Buffalo, and \$20.50, eastern Pennsylvania furnace, and frequently higher prices are obtained depending on the points of delivery. Opera-

tions among jobbing foundries are irregular, but in general the melt is fairly well maintained.

We quote per gross ton delivered in the New York district as follows, having added to furnace prices \$2.52 freight from eastern Pennsylvania, \$4.91 from Buffalo and \$5.54 from Virginia:

East Pa. No. 2 fdy., sil. 1.75 to 2.25.....	\$21.89 to \$23.02
East Pa. No. 2X fdy., sil. 2.25 to 2.75.....	22.39 to 23.52
East Pa. No. 1X fdy., sil. 2.75 to 3.25.....	22.89 to 24.02
Buffalo fdy., sil. 1.75 to 2.25 (all-rail).....	22.91 to 23.91
Buffalo fdy., sil. 1.75 to 2.25 (by barge canal, del'd alongside in lighterage limits, N. Y. and Brooklyn).....	20.75 to 21.75
No. 2 Virginia fdy., sil. 1.75 to 2.25.....	27.54 to 28.04

**Ferroalloys.**—Both the ferromanganese and spiegel-eisen markets are practically devoid of new inquiry, with the exception of a carload lot now and then, which is sold at unchanged quotations. Specifications on contract for these alloys, and for other alloys used in steel making, continue at a higher pressure than was expected a month or two ago, due to the sustained production of steel.

### Warehouse Prices, f.o.b. New York

	Base per Lb.
Plates and structural shapes.....	3.34c.
Soft steel bars and small shapes.....	3.24c.
Iron bars.....	3.24c.
Iron bars, Swedish charcoal.....	7.00c. to 7.25c.
Cold-finished steel shafting and screw stock—	
Rounds and hexagons.....	4.00c.
Flats and squares.....	4.50c.
Cold-rolled strip, soft and quarter hard.....	6.25c.
Hoops.....	4.49c.
Bands.....	3.99c.
Blue annealed sheets (No. 10 gage).....	3.89c.
Long terme sheets (No. 28 gage).....	6.35c.
Standard tool steel.....	12.00c.
Wire, black annealed.....	4.50c.
Wire, galvanized annealed.....	5.15c.
Tire steel, 1½ x ¼ in. and larger.....	3.30c.
Smooth finish, 1 to 2½ x ¼ in. and larger.....	3.65c.
Open-hearth spring steel, bases.....	4.50c. to 7.00c.

#### Per Cent Off List

Machine bolts, cut thread.....	40 and 10
Carriage bolts, cut thread.....	30 and 10
Coach screws.....	40 and 10

#### Boiler Tubes—Per 100 Ft.

Lap welded steel, 2-in.....	\$17.33
Seamless steel, 2-in.....	20.24
Charcoal iron, 2-in.....	25.00
Charcoal iron, 4-in.....	67.00

#### Discounts on Welded Pipe

Standard Steel—	Black	Galv.
½-in. butt.....	46	29
¾-in. butt.....	51	37
1-in. butt.....	53	39
2½-6-in. lap.....	48	35
7 and 8-in. lap.....	44	17
11 and 12-in. lap.....	37	12

Wrought Iron—		
½-in. butt.....	4	+19
¾-in. butt.....	11	+9
1-1½-in. butt.....	14	+6
2-in. lap.....	5	+14
3-6-in. lap.....	11	+6
7-12-in. lap.....	3	+16

#### Tin Plate (14 x 20 in.)

	Prime	Seconds
Coke, 100-lb. base box.....	\$6.45	\$6.20
Charcoal, per box—	A	AAA
IC.....	\$9.70	\$12.10
IX.....	12.00	14.25
IXX.....	13.90	16.00

#### Terne Plate (14 x 20 in.)

IC—20-lb. coating.....	\$10.00 to \$11.00
IC—30-lb. coating.....	12.00 to 13.00
IC—40-lb. coating.....	13.75 to 14.25

#### Sheets, Box Annealed—Black, C. R. One Pass†

	Per Lb.
Nos. 18 to 20.....	3.95c. to 4.10c.
Nos. 22 and 24.....	4.00c. to 4.15c.
No. 26.....	4.05c. to 4.20c.
No. 28*.....	4.15c. to 4.30c.
No. 30.....	4.35c. to 4.50c.

#### Sheets, Galvanized†

	Per Lb.
No. 14.....	4.25c. to 4.40c.
No. 16.....	4.40c. to 4.55c.
Nos. 18 and 20.....	4.55c. to 4.70c.
Nos. 22 and 24.....	4.70c. to 4.85c.
No. 26.....	4.85c. to 5.00c.
No. 28*.....	5.15c. to 5.30c.
No. 30.....	5.65c. to 5.80c.

\*No. 28 and lighter, 36 in. wide, 20c. higher per 100 lb.

†Lower price is for lots of 50 bundles of galvanized or 25 bundles of black.



**Finished Steel.**—July business is holding up to a rate probably not equaled in any July since the war. In tin plate, pipe, hot-rolled strip steel and structural steel, business is surprisingly large. Specifications have been coming to local sales offices at a good rate, in some cases equaling June volume, although this is the exception rather than the rule. Sheets and plates have shown a slight improvement in the past week or two. Wire products and cold-rolled strip steel are dull, but in the case of wire products prices are holding, while on cold-rolled strip the so-called regular quotation of 3.75c., Pittsburgh, is not being held to except on less than carload lots. Carload buyers have no difficulty in getting concessions of \$2 and \$3 a ton. Galvanized sheets have sold in the past week at 4.20c., Pittsburgh, in a few cases and at 4.25c. in quite a number of instances. Mills are not willing to make contracts at these prices, however, and they apply only on carload or larger lots for prompt specification. On black sheets the range still is 3c. to 3.10c., Pittsburgh, while blue annealed sheets are holding fairly well at 2.30c. An increasing export demand for sheets has caused the mills to be somewhat wary of making long commitments at the present lowest levels. The spread between export and domestic prices has been narrowing. For example, when galvanized sheets for domestic sale were 4.50c., Pittsburgh, the export price was frequently as low as 4c., but now, compared with domestic sales at 4.20c. and 4.25c., the export price is 4.10c. This reflects the extent to which the export market has improved. Plates are holding at 1.90c., Pittsburgh, but buying is in smaller volume this month than last. Mill operations in the East are being slightly reduced. Mills rolling shapes have very good backlogs and incoming business is at a rate closely approximating shipments. There are no developments in steel bars, which are quoted at 2c., Pittsburgh, though many buyers are getting shipments on contracts made at 1.90c.

We quote for mill shipments, New York delivery, as follows: Soft steel bars, 2.34c. per lb.; plates, 2.24c.; structural shapes, 2.24c. to 2.34c.; bar iron, 2.24c.

**Warehouse Business.**—Prices on all products are holding firmly to the quoted schedule, particularly black and galvanized sheets, which are apparently quite stable on the present basis of 4.15c. to 4.30c. and 5.15c. to 5.30c. per lb. respectively. Rivets and boiler flanges have been slightly reduced. The volume of business for July, while considerably under the June figure, is considered by most warehouses as satisfactory for a usually quiet month.

**Cast Iron Pipe.**—Municipal purchasing is confined to small lots involved in contracts for laying pipe. Boston opens bids this week on about 300 tons of large sized water pipe. Among private inquiries for pipe is a request for preliminary bids by the J. G. White Engineering Corporation, 43 Exchange Place, New York, on about 15,000 ft. of 12-in., 15,000 to 30,000 ft. of 8-in. and 15,000 to 40,000 ft. of 6-in. water pipe (about 1200 tons) for Far Rockaway, Long Island. The Foundation Co., 120 Liberty Street, New York, is reported to have been awarded a large contract for a water supply system in Caracas, Venezuela. Prices are fairly firm, but on desirable business where competition is keen, low quotations often appear.

We quote pressure pipe per net ton, f.o.b. New York in carload lots, as follows: 6-in. and larger, \$50.60 to \$52.60; 4-in. and 5-in., \$55.60 to \$57.60; 3-in., \$65.60 to \$67.60; with \$5 additional for Class A and gas pipe.

**Reinforcing Bars.**—Sizable awards for the week were few, and there are no additional inquiries of importance. Many small projects requiring 50 tons or less are being booked, and a fairly large number of big jobs in the hands of contractors is tending to keep mill prices steady at 2.10c., base Pittsburgh, for small lots and 2c. for lots of 100 tons and over. The warehouse price is 2.90c., New York.

**Coke.**—Demand continues light but curtailed production is evidently the cause of a firm market. Standard foundry ranges from \$4 to \$5.25 and furnace from \$3 to \$3.50 per ton. Delivered prices of Connellsville foundry coke are \$7.91 to \$8.91, to Newark and Jersey

City, N. J., \$8.03 to \$9.03 to northern New Jersey and \$8.79 to \$9.79 to New York or Brooklyn, N. Y. By-product is quoted at \$9.75 to \$10.77, delivered Newark or Jersey City, N. J.

**Old Material.**—Eastern Pennsylvania consumers of heavy melting steel are reported showing more interest in contracting, but are unwilling to meet the price ideas of brokers. Having found it necessary to pay up to \$16 per ton, delivered, in some instances to fulfill contracts, brokers are inclined to place the present selling price at considerably above this figure. The range of the buying market is still from \$14.50 to \$15.50 per ton, delivered, with \$15.75 and higher occasionally paid by some brokers. Heavy breakable cast is being purchased at \$16 per ton, delivered to a Harrisburg, Pa., consumer and \$17 per ton, delivered to a Florence, N. J., consumer. Stove plate is being shipped to foundry consumers at West Mahwah, N. J., and Bridgeport, Conn., for which \$13 per ton, delivered, is paid.

Buying prices per gross ton, New York, follow:

Heavy melting steel (yard).....	\$10.00 to \$10.50
Heavy melting steel (railroad or equivalent) .....	11.75 to 12.25
Rails for rolling.....	12.75
Steel car axles.....	19.00 to 19.50
Iron car axles.....	22.00 to 22.50
No. 1 railroad wrought.....	13.75 to 14.25
Forge fire .....	10.00 to 10.50
No. 1 yard wrought, long.....	12.75 to 13.25
Cast borings (steel mill).....	9.75 to 10.00
Cast borings (chemical).....	12.50 to 13.00
Machine shop turnings.....	9.75 to 10.25
Mixed borings and turnings.....	9.50 to 10.00
Iron and steel pipe (1 in. diam., not under 2 ft. long).....	10.75 to 11.25
Stove plate (steel mill).....	10.00 to 10.25
Stove plate (foundry).....	11.00
Locomotive grate bars.....	11.00 to 11.50
Malleable cast (railroad).....	16.00 to 16.50
Cast iron car wheels.....	12.75 to 13.25
No. 1 heavy breakable cast.....	12.25 to 14.00

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

No. 1 machinery cast.....	\$16.50 to \$17.00
No. 1 heavy cast (columns, building material, etc.), cupola size .....	15.00 to 15.50
No. 2 cast (radiators, cast boilers, etc.) .....	14.00 to 14.50

## Philadelphia

### Steel Demand Is Steady—Pig Iron Market Dull—Scrap Is Stronger

PHILADELPHIA, July 27.—Steel sales by Philadelphia offices in the 20 business days of July ended with last Saturday were generally ahead of the total for all of July last year. There is a steady stream of orders and specifications, not many of unusual size, but the aggregate continues to surprise those in the steel trade who had not looked for so rapid a midsummer pace. There is no change in the price situation other than further weakness in galvanized sheets and cold-rolled strip steel. The former are being sold quite freely at 4.20c. to 4.25c., Pittsburgh, while cold-rolled strip in carload lots is 3.60c. to 3.65c., Pittsburgh, and the tube customers are paying about 3.40c., Pittsburgh.

The pig iron trade has had one of the quietest weeks of the year, but the scrap market is taking on a little more life, with an upturn in heavy melting steel of 50c. a ton.

**Ferroalloys.**—Quotations on ferromanganese continued unchanged, being \$88, furnace, in the case of one seller and \$95, furnace, with another.

**Billets.**—Eastern steel mills are not anxious sellers of billets, as they need the steel for their own use. The demand is light. Prices are unchanged at \$35, Pittsburgh, for rerolling billets and \$40 for ordinary forging billets.

**Plates.**—Eastern plate mills are operating at about 50 to 60 per cent, which is not quite so busy as they were in June but is above the midsummer average of recent years. There is a fairly even flow of orders, but few of large size. The price remains firm at 1.90c., Pittsburgh.

**Structural Material.**—The largest fabricated award locally in the week was 1500 tons for a bank and of-

rice building on Walnut Street. Some construction work is being held back because of the inability of fabricators to make deliveries that are satisfactory to prospective builders. The mills are busy on specifications received in June. New orders are in fair volume. Quotations range from 1.90c. to 2c., Pittsburgh.

**Pig Iron.**—Foundries have fairly well satisfied their requirements for third quarter, and there has been no buying for fourth quarter except in the case of some of the larger users of iron who covered all or part of their needs for the last half. The past week was possibly the quietest the local pig iron trade has had this year. The price situation has not changed. Nominal quotations are \$21, furnace, for No. 2 plain and \$21.50, furnace, for No. 2X, with the freight rate from the nearest furnace added. In some cases this means that the sellers do not net more than \$20.50, base, at furnace. Pending business in basic iron may be closed at \$21, delivered.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rates varying from 76c. to \$1.63 per gross ton:

East. Pa. No. 2 plain, 1.75 to 2.25 sil.	\$21.76 to \$22.26
East. Pa. No. 2X, 2.25 to 2.75 sil.	22.26 to 22.76
East. Pa. No. 1X	22.76 to 23.26
Virginia No. 2 plain, 1.75 to 2.25 sil.	27.67 to 28.67
Virginia No. 2X, 2.25 to 2.75 sil.	28.17 to 29.17
Basic delivered eastern Pa.	21.00 to 21.25
Gray forge	21.50 to 22.00
Malleable	22.00 to 22.50
Standard low phos. (f.o.b. furnace)	22.00 to 23.00
Copper bearing low phos. (f.o.b. furnace)	23.50 to 24.00

**Bars.**—Orders for steel bars at 2c., Pittsburgh, are not numerous, probably because of the fact that so many users covered their requirements for July, and in some cases for August, prior to the last advance. The mills have fairly good specifications. Awards of reinforcing bars are slightly more active.

**Old Material.**—Steel mills have not been active buyers of heavy melting steel, as most of them still have considerable scrap due them on old contracts, which brokers are having difficulty in filling. Brokers have again paid \$16, delivered, on \$15.50 orders. The scrap trade seems imbued with the idea that prices are due for a rise, and there are few that are willing to sell at today's quotations except when material is on cars and must be moved. A broker who has been paying \$14.50 for delivery at one point has been obliged to raise his price to \$15 to complete the contract within the time limit. A steel company, caught with an insufficient supply of steel scrap, made a quiet purchase a week ago at \$16.50, the highest price that has been paid in this market in some time. The range on heavy melting steel is now \$15 to \$16.50. Other grades of scrap are not very active, but there is a stiffening of price ideas on the part of brokers and dealers and a few actual advances. Low phosphorus melting stock, couplers and knuckles and rolled steel wheels have been marked up 50c. to \$1 a ton. There is a better demand for cast iron borings at \$14, delivered.

We quote for delivery, consuming points in this district, as follows:

No. 1 heavy melting steel	\$15.00 to \$16.50
Scrap rails	15.00 to 16.50
Steel rails for rolling	15.50 to 16.00
No. 1 low phos., heavy, 0.04 per cent and under	20.00 to 21.00
Couplers and knuckles	18.00 to 18.50
Rolled steel wheels	18.00 to 18.50
Cast iron car wheels	17.00 to 17.50
No. 1 railroad wrought	16.50 to 17.00
No. 1 yard wrought	16.00 to 16.50
No. 1 forge fire	13.50 to 14.00
Bundled sheets (for steel works)	13.50 to 14.00
Mixed borings and turnings (for blast furnace)	12.50 to 13.50
Machine shop turnings (for steel works)	13.50
Machine shop turnings (for rolling mills)	13.50 to 14.00
Heavy axle turnings (or equivalent)	14.00 to 14.50
Cast borings (for steel works and rolling mill)	14.00
Cast borings (for chemical plant)	15.00 to 15.50
No. 1 cast	17.00 to 18.00
Heavy breakable cast (for steel works)	16.50
Railroad grate bars	14.00
Stove plate (for steel works)	14.00
Wrought iron and soft steel pipes and tubes (new specifications)	14.50 to 15.00
Shafting	20.00 to 21.00
Steel axles	22.00 to 22.50

**Sheets.**—Sheet business in this district has improved, but prices have not. There is virtually no change on black and blue annealed sheets, but galvanized sheets are weaker. A number of sales have been made at 4.20c., Pittsburgh. The range on black sheets is 3c. to 3.10c., Pittsburgh, and on blue annealed it is 2.30c. to 2.40c.

**Imports.**—Pig iron imports at Philadelphia declined last week to 2684 tons, of which 1534 tons was from England, 950 tons from Germany and 200 tons from the Netherlands. Other imports were as follows: Iron ore from Algeria, 5350 tons; steel blooms from France, 559 tons; structural steel from Belgium, 422 tons; hoop steel from England, 16 tons.

## STEEL CORPORATION EARNINGS

### For Second Quarter Amount to \$4.20 per Share of Common Stock

Earnings of the United States Steel Corporation for the second quarter of 1926 amounted to \$4.20 per share of common stock after allowing for the usual dividends on the preferred stock. For the first quarter the corresponding rate of earnings was \$3.89 per share of common stock. The regular dividends of 1½ per cent were declared on both the preferred and common stocks.

The amount of earnings available for common stock dividends in the first and second quarters of 1925 was \$2.93 and \$3.07, respectively, or \$6 for the first half of last year compared with \$8.09 for the first half of this year, without allowance, of course, for appropriations and expenditures for additions and improvements to plants. Such allowances last year amounted to \$25,000,000, or nearly \$5 per share of common stock. The surplus for the two quarters this year now amounts to \$23,323,075, against \$12,693,871 for the first half of 1925, and \$29,632,442 for all of 1925.

Quarters	1926	1925	1924	1923
First	\$45,061,285	\$39,882,992	\$50,075,445	\$34,780,069
Second	47,814,105	40,624,220	41,381,039	47,858,181
Third		42,400,419	30,718,415	47,053,680
Fourth		42,630,840	30,939,912	49,954,744

#### EARNINGS FOR SECOND QUARTER

	Earnings Before Charging Interest on the Subsidiary Companies' Bonds Outstanding	Less: Interest on the Subsidiary Companies' Bonds Outstanding	Balance of Earnings
April, 1926	\$16,405,099	\$699,897	\$15,705,202
May, 1926	16,859,405	699,539	16,159,866
June, 1926	16,646,645	697,608	15,949,037
	\$49,911,149	\$2,097,044	
Total earnings after deducting all expenses incident to operations, also estimated taxes and interest on bonds of the subsidiary companies			
Less, charges and allowances for depletion and depreciation, applied as follows, viz.:			\$47,814,105
To depletion and depreciation and sinking funds on bonds of subsidiary companies		\$12,785,662	
To sinking funds on U. S. Steel Corporation bonds		2,761,864	
			15,547,526
Net income			\$32,266,579
Deduct: Interest for the quarter on U. S. Steel Corporation bonds outstanding		\$4,324,287	
Premium on bonds redeemed		293,750	
			4,618,037
Balance			\$27,648,542
Dividends:			
Preferred, 1½ per cent		\$6,304,919	
Common, 1½ per cent		8,895,293	
			15,200,212
Surplus for the quarter			\$12,448,330

The business of the Woodward & Powell Planer Co., Worcester, is being discontinued and the plant is being liquidated by Percy M. Brotherhood & Son, 25 Church Street, New York, who are offering the land, buildings, equipment, patterns, drawings and good will for sale. The Woodward & Powell company was organized 35 years ago, growing out of the Powell Planer Co., Worcester, which in turn was incorporated in 1876.



## San Francisco

### Coast Receives 3800 Tons of Foreign Steel—German Coke Placed

SAN FRANCISCO, July 24 (*By Air Mail*).—Outstanding developments of the week have been the arrival of 3800 tons of foreign steel and cast iron pipe at Pacific Coast ports, the placing of over 1000 tons of German coke locally, and slightly heavier buying of plates and shapes. The shipment of steel and pipe, which included French, Belgian and German material, was distributed as follows: About 1300 tons of bars, angles and cast iron pipe was laid down in Los Angeles; about 1000 tons of structural shapes, soft steel and reinforcing bars was received in San Francisco, and about 1500 tons of plates, shapes, wire and bars was delivered in the Pacific Northwest. Recent quotations on foreign reinforcing bars and also on foreign shapes show a range of 1.85c. to 2.15c., duty paid, c.i.f. Coast ports. Eastern mills continue to quote both bars and shapes at 2.35c., c.i.f.

Buying of steel during the week has been somewhat more active, but fresh inquiry has added little to the backlog of pending business. While the strength of prices remains untested, the action of the two leading sellers in refusing to accept less than 2.30c., c.i.f. Coast ports, on plates, or under 2.35c. on shapes, has tended to make quotations slightly firmer in other departments of the market.

A referendum will be held Aug. 31 in Los Angeles on a bond issue of \$11,000,000, which, it is proposed, will be used to increase the capacity of existing power plants, to construct generating and transmission storage units above existing plants, to purchase equipment for this work and to acquire necessary rights of way.

**Pig Iron.**—Buying is restricted, and no inquiries of importance have come out. There has been relatively little forward buying so far this quarter. Quotations are unchanged.

•Utah basic .....	\$26.00 to \$27.00
•Utah foundry, sil. 2.75 to 3.25...	26.00 to 27.00
•English foundry, sil. 2.75 to 3.25...	25.00
•Indian foundry, sil. 2.75 to 3.25...	25.00
•German foundry, sil. 2.75 to 3.25...	23.00 to 23.50
•Dutch foundry, sil. 2.75 to 3.25...	22.50
•Belgium foundry, sil. 2.75 to 3.25...	22.00

•Delivered San Francisco.  
•Duty paid, f.o.b. cars San Francisco.

**Shapes.**—Lettings for the week total 2800 tons; fresh inquiries call for 2399 tons. The largest individual award, 800 tons, for an office building in Los Angeles, was taken by the Union Iron Works, Los Angeles. About 2000 tons will be required for a new hotel in Santa Monica, Cal. Eastern mill quotations on plain material are firm at 2.35c., c.i.f. Coast ports.

**Plates.**—Bids close Aug. 3 on 1500 tons for a pipe line at Laguna Beach, Cal. Bend, Ore., has put out an inquiry for two 1,500,000-gal. steel reservoirs. The tonnage required is estimated at 150 tons. Several small lettings have been made, but no jobs calling for over 100 tons are known to have been closed. Eastern mills are asking 2.30c., c.i.f. Coast ports.

**Bars.**—Contracts closed during the week calling for 100-ton lots of reinforcing bars aggregate 1000 tons. The largest individual letting, 500 tons, was placed in Seattle, Wash. Local concrete bar jobbers quote as follows: 2.80c., base, per lb. on lots of 250 tons; 2.95c., base, per lb. on carload lots, and 3.20c., base, on less than carload lots.

#### Warehouse Prices, f.o.b. San Francisco

	Base per Lb.
Plates and structural shapes.....	3.30c.
Mild steel bars and small angles.....	3.30c.
Small channels and tees, ½-in. to 2½-in..	3.90c.
Spring steel, ½-in. and thicker.....	7.00c.
No. 28 black sheets.....	4.90c.
No. 10 blue annealed sheets.....	3.90c.
No. 28 galvanized sheets.....	6.00c.
Common wire nails, base per keg.....	\$3.75
Cement coated nails, base per keg.....	3.00

**Cast Iron Pipe.**—Sacramento, Cal., has awarded 318 tons of 6-in. and 8-in., Class B cast iron pipe to the United States Cast Iron Pipe & Foundry Co., and San Diego, Cal., has placed 200 tons of 4, 6 and 8-in., Class B pipe, for the Crown Point and Islinare subdivisions with an unnamed firm. Bolinas, Cal., will hold a referendum in September on a bond issue for water supply improvements, which, it is estimated, will require a minimum of 547 tons of cast iron pipe.

**Steel Pipe.**—Los Angeles has awarded 395 tons of 8-in. Matheson joint pipe, required under Specification 795-E, to the Grinnell Co. of the Pacific. San Francisco has placed 282 tons of 4-in. black pipe for Hetch-Hetchy Contract No. 114, with R. W. Kinney. The Pacific Gas & Electric Co., San Francisco, has closed bids on about 100 tons of standard steel pipe.

**Warehouse Business.**—Demand has increased slightly, but few large orders are being placed. Jobbers' stocks apparently are adequate, deliveries from Eastern mills are fairly prompt, and prices generally are firm.

**Sheets.**—While buying is rather light, it is somewhat more active than it has been. Local mills recently have taken a number of small orders for both blue annealed and galvanized sheets.

**Rails.**—A northern California lumber company, which is starting to build five miles of track, is inquiring for about 500 tons of standard-section relaying rails.

**Coke.**—Two local users have placed orders with importers of German coke for 500 tons each, and a number of smaller lots have been bought during the week. Larger inquiry for coke is understood to have developed in Los Angeles recently. Local importers quote German by-product fuel at about \$12 to \$12.50 per net ton at incoming dock.

## St. Louis

### Pig Iron Buying Is Light—Scrap Market Remains Firm

ST. LOUIS, July 27.—With numerous purchasing agents off on vacations and most of the principal users covered for their third quarter requirements, buying of pig iron has declined to very small proportions. The melt holds up fairly well, however, and there are unusually few requests for delay in forwarding contract quotas. Actual sales for the week totaled only about 1200 tons, and in this aggregate was included 500 tons sold to an East Side interest by the St. Louis Coke & Iron Corporation for delivery over the next two months. Otherwise selling was confined to small lots for prompt shipment. Prices are unchanged but show no strength. Competition for the little business coming out is keen, and a prime customer might obtain concessions under current quotations on a round tonnage.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices, \$2.16 freight from Chicago, \$4.42 from Birmingham, all rail, and 81c. average switching charge from Granite City:

Northern fdy., sil. 1.75 to 2.25...	\$22.66 to \$23.16
Northern malleable, sil. 1.75 to 2.25 .....	22.66 to 23.16
Basic .....	23.16 to 24.16
Southern fdy., sil. 1.75 to 2.25...	24.42 to 25.42
Granite City iron, sil. 1.75 to 2.25.	22.81 to 23.31

**Coke.**—Inquiry for foundry coke for use through the next 12 months is fairly active, the season considered. The total is close to 12,000 tons, including 3500 tons for an Oklahoma melter. By-product interests report a moderately active demand for spot coke. Demand for furnace coke from the general manufacturing trade has receded, and interest in domestic coke has been flattened out by the spell of extreme high temperatures. Prices are unchanged.

**Finished Iron and Steel.**—Demand for reinforcing concrete bars has picked up. While sales are mainly of small lots for quick shipment, their aggregate is large. The Laclede Steel Co. has booked 90 to 100 tons

## Warehouse Prices, f.o.b. St. Louis

	Base per Lb.
Plates and structural shapes.....	3.25c.
Bars, mild steel or iron.....	3.15c.
Cold-finished rounds, shafting and screw stock.....	3.75c.
No. 28 black sheets.....	4.60c.
No. 10 blue annealed sheets.....	3.60c.
No. 28 galvanized sheets.....	5.70c.
Black corrugated sheets.....	4.65c.
Galvanized corrugated sheets.....	5.75c.
Structural rivets.....	3.65c.
Boiler rivets.....	3.85c.
Per Cent Off List	
Tank rivets, $\frac{7}{8}$ -in. and smaller.....	70
Machine bolts.....	50 and 5
Carriage bolts.....	47 $\frac{1}{2}$
Lag screws.....	55 and 5
Hot-pressed nuts, square, blank or tapped, 3.25c. off per lb.	
Hot-pressed nuts, hexagons, blank or tapped, 3.75c. off per lb.	

for the St. Louis City Sanitarium, 80 tons for a receiving vault in a local cemetery and 60 tons for a new Y. W. C. A. building here. On Aug. 1 the Missouri Highway Commission will let road contract work, including 35 bridges. The demand for iron and steel goods out of store continues good, with building materials leading. Greater interest in sheets has developed in the last few days, and prices are steadier. Fabricators report no large jobs but enough small orders to keep their shops busy.

**Old Material.**—Industries are buying scrap only enough for immediate and urgent needs, but the dealers are still short and are holding prices at the extreme top of the recent advance. Country scrap is not moving in, since freight rates make profitable shipment impossible, and small city dealers are disinclined to sell their accumulations. Dealers with short commitments are unable to cover, and have sustained sizable losses in numerous instances. The railroads are marketing scrap freely. Lists before the trade include: Union Pacific, 2700 tons; Wabash, 400 tons; Gulf Coast Lines, 1300 tons; Louisville, Henderson & St. Louis, 3500 tons; Burlington, 5800 tons; St. Louis-San Francisco, 1000 tons, and the St. Paul, 9000 tons. Dodge Brothers, Inc., Detroit, offer 5000 tons.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

Per Gross Ton	
Iron rails.....	\$12.00 to \$12.50
Rails for rolling.....	16.50 to 17.00
Steel rails less than 3 ft.....	16.25 to 16.75
Relaying rails, 60 lb. and under.....	20.50 to 23.50
Relaying rails, 70 lb. and over.....	26.50 to 29.00
Cast iron car wheels.....	16.00 to 16.50
Heavy melting steel.....	13.50 to 14.00
Heavy shoveling steel.....	13.50 to 14.00
Frogs, switches and guards cut apart.....	15.50 to 16.00
Railroad springs.....	17.50 to 18.00
Heavy axle and tire turnings.....	11.00 to 11.50
No. 1 locomotive tires.....	16.00 to 16.50
Per Net Ton	
Steel angle bars.....	13.75 to 14.25
Steel car axles.....	19.75 to 20.25
Iron car axles.....	21.50 to 22.00
Wrought iron bars and transoms.....	19.00 to 19.50
No. 1 railroad wrought.....	11.75 to 12.25
No. 2 railroad wrought.....	12.00 to 12.50
Cast iron borings.....	9.75 to 10.25
No. 1 bushelling.....	11.00 to 11.50
No. 1 railroad cast.....	14.75 to 15.25
No. 1 machinery cast.....	17.00 to 17.50
Railroad malleable.....	13.50 to 14.00
Machine shop turnings.....	6.25 to 7.75
Bundled sheets.....	6.75 to 7.25

## Boston

## New York State Furnaces Main Factors in Pig Iron Market—Scrap Stronger

BOSTON, July 27.—Two New York State furnaces are monopolizing the New England pig iron market. Of approximately 8000 tons reported sold this week they booked about 80 per cent. Connecticut foundries have been more active in the market than those in other New England States, although a Massachusetts heater manufacturer bought about 1500 tons No. 2 plain New York State and foreign iron, and has intimated it will shortly buy an equal amount for fourth quarter. A Connecticut foundry purchased 1000 tons of No. 1X

and No. 2X iron, another bought 350 tons of No. 1X and 250 tons No. 2X, and numerous other plants in that State closed for smaller tonnages, mostly No. 2X and No. 1X for third quarter delivery, with some shipments extending into the fourth quarter. It is a buyers' market, with New York State furnaces meeting quotations made on foreign iron. Continental iron is still available at \$20 on dock here duty paid, that price having been made on No. 2 plain, No. 2X and No. 1X. For delivery at interior points prices average around \$23 for No. 2X, or the equivalent of about \$18, Buffalo furnace. Business in irons from Buffalo, Virginia, western and eastern Pennsylvania is confined to scattered small tonnages, mostly for rounding out stock piles or for mixture purposes.

We quote delivered prices on the basis of the latest sales as follows, having added \$3.65 freight from eastern Pennsylvania, \$4.91 from Buffalo, \$5.92 from Virginia, and \$9.60 from Alabama:

East. Penn., sil. 1.75 to 2.25.....	\$24.15 to \$24.65
East. Penn., sil. 2.25 to 2.75.....	24.65 to 25.15
Buffalo, sil. 1.75 to 2.25.....	22.91 to 23.91
Buffalo, sil. 2.25 to 2.75.....	23.41 to 24.41
Virginia, sil. 1.75 to 2.25.....	27.92 to 28.42
Virginia, sil. 2.25 to 2.75.....	28.42 to 28.92
Alabama, sil. 1.75 to 2.25.....	30.60
Alabama, sil. 2.25 to 2.75.....	31.10

**Warehouse Business.**—Although rather numerous, individual orders for bars, plates, structural steel and sheets coming into the market are growing progressively smaller, and warehouses are resorting to price cutting. Independent warehouses are reported as well covered on material for the third quarter, but are not specifying very freely. Consequently there is more or less borrowing of material going on among the trade. The demand for wire nails is good for this time of the year.

## Warehouse Prices, f.o.b. Boston

	Base per Lb.
Soft steel bars and small shapes.....	3.265c.
Flat, hot rolled.....	4.15c.
Reinforcing bars.....	3.265c. to 3.54c.
Iron bars—	
Refined.....	3.265c.
Best refined.....	4.60c.
Norway, rounds.....	6.60c.
Norway, squares and flats.....	7.10c.
Structural shapes—	
Angles and beams.....	3.365c.
Tees.....	3.365c.
Zees.....	3.465c.
Plates.....	3.365c.
Spring steel—	
Open-hearth.....	5.00c. to 10.00c.
Crucible.....	12.00c.
Tire steel.....	4.50c. to 4.75c.
Bands.....	4.015c. to 5.00c.
Hoop steel.....	5.50c. to 6.00c.
Cold-rolled steel—	
Rounds and hexagons.....	3.95c.
Squares and flats.....	4.45c.
Toe calk steel.....	6.00c.

**Coke.**—Both the New England Coal & Coke Co. and the Providence Gas Co. are billing out foundry coke at \$12 a ton delivered within a \$3.10 freight rate zone, but are securing comparatively few specifications against last half contracts. The market for Connellsville district foundry coke is reported firmer, although desirable fuel is still available at prices under those quoted by local ovens. The New England Coal & Coke Co.'s new battery of coke ovens, designed chiefly to care for the needs of the Mystic Iron Works, is progressing rapidly but will not be ready to operate for several months. The coke company has not started making coke for the blast furnace, which probably will blow in within a month.

**Sheets.**—Consumers are buying from hand to mouth in expectation of lower prices. Stocks in their hands are depleted. Mills are endeavoring to hold galvanized sheets at 4.30c., base Pittsburgh, but 4.20c. can be done. The market for blue annealed sheets apparently is pegged at 2.30c. and black at 3.10c.

**Shapes and Plates.**—Demand for plates is very fair, with the market firm at 1.90c., base per lb., Pittsburgh. Mill rolling schedules are well extended. Shapes are holding at 2c., base, per lb. Pittsburgh. Fabricators report the largest number of bids passing through their offices in many years, but most individual prospects call for less than 100 tons of steel. Most fabricators are booked through the third quarter and some well into the fourth period.



**Old Material.**—Quotations on certain kinds of scrap have an unusually wide spread, which is due, in part, to uneasiness on the part of some buyers with steel mill contracts. Heavy melting steel is a case in point. Certain dealers are paying \$11.25 to \$11.50 on cars shipping point, while others are securing an occasional carlot at \$10.50 to \$11. The refusal of some holders to sell at even \$11.50 accentuates the scarcity of good scrap. The lowest price reported paid for specification pipe the past week was \$10 on cars, and as high as \$10.25 was given, contrasted with \$9.50 to \$10 a week ago. A firmer undertone is also noted in the market for steel turnings and rolling mill borings, but chemical borings are somewhat cheaper. Quotations on forge scrap and skeleton cover a wide range, with sales reported at prices ranging from \$8.50 to \$9.50 whereas a week ago \$9 appeared to be the most dealers would pay. The Boston & Maine Railroad on Friday, July 23, closed bids on 50 cars of miscellaneous material.

The following prices are for gross-ton lots delivered consuming points:

Textile cast .....	\$19.50 to \$20.00
No. 1 machinery cast .....	19.00 to 19.50
No. 2 machinery cast .....	17.00 to 18.00
Stove plate .....	13.00 to 13.50
Railroad malleable .....	19.00 to 19.50

The following prices are offered per gross-ton lots, f.o.b. Boston rate shipping points:

No. 1 heavy melting steel .....	\$10.50 to \$11.50
No. 1 railroad wrought .....	12.00 to 12.50
No. 1 yard wrought .....	11.00 to 11.25
Wrought pipe (1 in. in diameter, over 2 ft. long) .....	10.00 to 10.25
Machine shop turnings .....	8.50 to 9.00
Cast iron borings, chemical .....	9.50 to 10.00
Cast iron borings, rolling mill .....	8.50 to 9.00
Blast furnace borings and turnings .....	8.00 to 8.50
Forged scrap .....	8.50 to 9.50
Bundled skeleton, long .....	8.50 to 9.50
Forged flashings .....	8.50 to 9.50
Bundled cotton ties, long .....	8.25 to 8.50
Bundled cotton ties, short .....	9.00 to 9.50
Shafting .....	15.50 to 16.00
Street car axles .....	15.50 to 16.00
Rails for rerolling .....	12.00 to 12.50
Scrap rails .....	10.50 to 11.00

## Toronto

### Pig Iron Prices Weaker—Scrap Demand Shows Improvement

TORONTO, ONT., July 26.—Foundry operations in eastern Canada average about 50 per cent of capacity. The low rate of melt is reflected in pig iron sales. The reduction of the tariff on automobiles and parts last April had the effect of causing a general slump in foundry activities. During the past two or three weeks, however, pig iron sales have begun to show improvement. Melters who make a practice of placing quarterly contracts are fairly well covered for third quarter needs, and some have bought for the remainder of the year, with the result that orders now appearing are chiefly from those consumers who buy from hand to mouth. Imports of pig iron are holding steady at about 2000 tons per month, the greater part of which is from the United States. Some pig iron is being shipped into the Montreal district from British producers, but such shipments have not been sufficiently large to warrant Canadian producers in dropping the differential between No. 1 and No. 2 foundry iron in that district. While there has been no change in Canadian pig iron prices for some weeks past, there is a feeling in some quarters that a decline is not altogether unlikely. Canadian pig iron prices are as follows: No. 1 foundry (2.25 to 2.75 per cent silicon), \$25.80 per ton; malleable, \$25.80; No. 2 foundry (1.75 to 2.25 per cent silicon), \$25.30, Toronto. Montreal prices are: No. 1 foundry, \$28.20; malleable, \$28.20; No. 2 foundry, \$27.70. Basic pig iron at the mills is now quoted at \$21 per ton.

**Old Material.**—The slight improvement in the iron and steel scrap market noted a week ago continues to hold both in the Toronto and Montreal districts. Current sales, however, are almost entirely for spot delivery and are mostly for small tonnages. Foundries are taking in supplies of machinery cast, stove plate and malleable scrap, and it is stated that much of the

recent buying is for the purpose of replenishing stock holdings. Mills in the Hamilton district are accepting contract deliveries and are placing some orders for small tonnages of heavy melting steel, turnings and a few other lines. Inquiries for old material in the Montreal market are appearing on export account and regular shipments are being made to United States buyers. Prices remain unchanged. Canadian dealers' buying prices are as follows:

Per Gross Ton	Toronto	Montreal
Steel turnings .....	\$9.50	\$6.00
Machine shop turnings .....	9.50	6.00
Wrought pipe .....	7.00	6.00
Rails .....	11.00	8.50
Heavy melting steel .....	11.00	7.50
No. 1 wrought scrap .....	11.00	13.00
Steel axles .....	16.00	17.00
Axles, wrought iron .....	18.00	19.00
Per Net Ton		
Standard car wheels .....	16.00	16.00
Malleable scrap .....	13.00	12.00
Stove plate .....	12.00	13.00
No. 1 machinery cast .....	16.00	18.00

## Birmingham

### Strong Demand for Plates—Pig Iron Steady—New Coke Ovens at Fairfield

BIRMINGHAM, July 27.—Pig iron sales are more numerous, although they are confined mainly to small, rather than round, tonnages. A few sales have been made for delivery into the fourth quarter, but nothing resembling a buying movement for that period has developed. A large proportion of the probable output of Alabama furnaces in the third quarter has been sold, and prices appear steady at \$21, Birmingham, for No. 2 foundry iron. Specifications are heavy, and it seems likely that surplus stocks on furnace yards will be no more than sufficient to take care of delivery requirements in excess of production. Melt is sustained, and the outlook among consuming industries is good. Cast iron pipe shops look for active business through the fall and winter. Stove foundries have bought considerable iron recently, and shops serving machinery manufacturers are busy. A maker of cotton presses has made the largest shipments in several years. The consumption of basic iron also has been heavy, in keeping with a high rate of activity among steel producers. Notwithstanding heavy shipments, neither blast furnaces nor mill are expected to show reductions in unfilled tonnage. Two or three blast furnaces will have to be relined before the end of the year, but they will probably be replaced by other stacks now idle.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry, 1.75 to 2.25 sil .....	\$21.00
No. 1 foundry, 2.25 to 2.75 sil .....	21.50
Basic .....	21.00
Charcoal, warm blast .....	30.00

**Rolled Steel.**—While demand for some forms of steel has slackened, there is greater activity in other lines. Demand for plates has been unusually pressing, a fact which is accounted for in considerable measure by a large volume of work which tank builders are doing for the oil industry. Fabricators of structural steel are also busy. Shipments from the mills are heavy. Rails for export are moving down the Warrior River for trans-shipment on foreign-bound ships at Mobile. The barge line operating out of Birmingham will put on an additional tow next week to handle shipments of steel for delivery in the Southwest. Steel bars and structural shapes continue to range from 2.15c. to 2.25c. per lb., base Birmingham, and tank plates are unchanged at 2.05c. to 2.15c.

**Cast Iron Pipe.**—Pressure pipe shops continue to operate practically at capacity and have not accumulated stocks. Prospects for fall and winter business are regarded as bright. Prices are unchanged at \$40 to \$41 per net ton, base Birmingham, for 6-in. and larger diameters.

**Coke.**—The Tennessee Coal, Iron & Railroad Co. is constructing 77 new by-product coke ovens at its Fairfield plant. These will be larger than the present ovens

and will be completed next year. Summer dullness in the coke market is disappearing, and production is being maintained. Foundry coke is unchanged at \$5.50 to \$6 per net ton, Birmingham.

**Old Material.**—Buying is in small lots, and the aggregate tonnage sold is below expectations. Consumers of heavy melting steel are abstaining from further buying until their present stocks are disposed of. Pipe shops continue to take deliveries of No. 1 cast, but are placing few new orders. Quotations are unchanged but weak. Dealers continue to operate with their regular yard forces.

We quote per gross ton, f.o.b. Birmingham district yards, as follows:

Cast iron borings, chemical.....	\$15.00 to \$16.00
Heavy melting steel.....	12.00 to 13.00
Railroad wrought.....	12.00 to 13.00
Steel axles.....	17.00 to 18.00
Iron axles.....	17.00 to 18.00
Steel rails.....	13.00 to 14.00
No. 1 cast.....	16.50 to 17.00
Tramcar wheels.....	16.00 to 17.00
Car wheels.....	16.00 to 16.50
Stove plate.....	14.00 to 14.50
Machine shop turnings.....	7.50 to 8.00
Cast iron borings.....	7.50 to 8.00
Rails for rolling.....	15.00 to 16.00

## Buffalo

### Fair Inquiry for Pig Iron—Steel Works Operations Improve

BUFFALO, July 27.—The Massey-Harris Harvester Co., Batavia, N. Y., is inquiring for 3000 tons of foundry and malleable pig iron, and the Burnham Boiler Corporation, Irvington, N. Y., wants 3700 tons, including 1200 tons for its Irvington plant, 1000 tons for Elizabeth, N. J., and 1500 tons for Lancaster, Pa. An Erie, Pa., melter is in the market for 1000 tons of No. 2X foundry or malleable for the fourth quarter, and a 2000-ton inquiry from the East is out. These are the outstanding lots before the local market. Prices in this district appear to be holding at \$20, base Buffalo, with the usual silicon differentials. For Eastern shipment \$19, Buffalo, and in some cases lower, has been quoted.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

No. 2 plain fdy., sil. 1.75 to 2.25..	\$19.00 to \$20.00
No. 2X foundry, sil. 2.25 to 2.75..	19.50 to 20.50
No. 1X foundry, sil. 2.75 to 3.25..	20.50 to 21.50
Malleable, sil. up to 2.25.....	20.00
Basic.....	19.00
Lake Superior charcoal.....	29.28

**Finished Iron and Steel.**—Operation of local mills is decidedly better, with approximately 27 open-hearth furnaces in operation by the three larger interests. Bars are firm at 2.265c., Buffalo, for large lots and 2.365c. for small lots. Shapes are steady at 2.265c. and plates at 2.165c. delivered Buffalo. Reinforcing bar business is so heavy that plant capacity is taxed to produce the material. Most of the tonnage is in small lots, on which a price of 2.75c., Buffalo, obtains. Sheets are in active demand, with 3.15c., base Pittsburgh, quoted on black. Steel warehouse business in July was very satisfactory, and indications are that it will continue to be.

**Old Material.**—The flurry of purchasing by dealers which was the chief activity of this market has subsided, and now there is only a small amount of buying. Some of the mill interests have enough stock to last them through the summer and do not expect to expand this until fall. A mill which has been offering \$14.50 for heavy melting steel is still in the market for small

lots at that price. Dealers have been offering as high as \$16.75 for selected No. 1 heavy melting steel, which costs them \$17.50 before it is ready for use by a mill. About the only sizable heavy melting steel transaction of the week was a sale of 3000 tons at \$16.50, with a tonnage of hydraulic compressed which sold for \$15.50. Stove plate is probably the most active grade in the list, with \$15.50 being paid. One foundry is picking up all the No. 1 cast it can locate and paying \$16.25. There has been no new specialty or low phosphorus buying.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

Heavy melting steel.....	\$14.50 to \$14.75
Selected No. 1 heavy melting steel.....	16.00 to 16.50
Low phosphorus.....	17.50 to 18.00
No. 1 railroad wrought.....	14.00 to 14.50
Car wheels.....	17.00 to 17.50
Machine shop turnings.....	9.50 to 10.00
Mixed borings and turnings.....	11.50 to 12.00
Cast iron borings.....	11.50 to 12.00
No. 1 busheling.....	15.00 to 15.50
Stove plate.....	15.25 to 15.50
Grate bars.....	13.00 to 13.50
Hand-bundled sheets.....	10.00 to 10.50
Hydraulic compressed.....	15.00 to 15.50
No. 1 machinery cast.....	16.00 to 16.25
Railroad malleable.....	16.50 to 17.00
Iron axles.....	24.00 to 25.00
Steel axles.....	16.00 to 16.50
Drop forge flashings.....	13.25 to 13.75

## Cincinnati

### Stronger Tone in Pig Iron Market—Heavy Melting Advances

CINCINNATI, July 27.—Although pig iron sales in the past week have been negligible, the furnace situation is strong, and prices gradually are tending upward. It is estimated that approximately 90 per cent of the consumers in this territory already have contracted for their third quarter requirements, while 20 per cent have covered their needs over the remainder of the year. One producer in the Ironton district is unable to supply iron for immediate delivery, but will take fourth quarter business. Southern Ohio foundry iron is firm at \$19.50, base furnace, and Ironton furnaces are refusing to accept orders under that figure. Conflicting reports concerning Alabama iron have appeared. Some producers state that iron from that State cannot be obtained under \$21, base Birmingham, but it is believed that certain furnaces would reduce their price 50c. to secure a desirable tonnage. Silvery iron sales have consisted principally of single carloads at the regular schedule of \$27.50 for 8 per cent. There has been a limited movement of malleable iron at \$19, base furnace. The Muncie Malleable Iron Co., Muncie, Ind., has bought 3000 tons of malleable from a Lake interest. A southern Ohio melter has purchased 1100 tons of malleable. The absence of inquiries indicates that the market will be quiet in the immediate future.

Based on freight rates of \$3.69 from Birmingham and \$1.89 from Ironton, we quote f.o.b. Cincinnati:

Alabama fdy., sil. 1.75 to 2.25 (base).....	\$24.19 to \$24.69
Alabama fdy., sil. 2.25 to 2.75.....	24.69 to 25.19
Tennessee fdy., sil. 1.75 to 2.25.....	24.69
Southern Ohio silvery, 8 per cent.....	30.39
So. Ohio fdy., sil. 1.75 to 2.25.....	21.39
So. Ohio malleable.....	20.89

**Reinforcing Bars.**—The Delco Light Co., Dayton, Ohio, has awarded 1000 tons of rail steel bars for its Moraine City, Ohio, plant to the West Virginia Rail Co., Huntington, W. Va. It is reported, but not confirmed, that on this job the prevailing price of 1.90c., mill, was shaded. No new projects of consequence have appeared in the past week. New billet bars are quoted at 2c., base Pittsburgh.

**Warehouse Business.**—The desire of fabricators to obtain structural steel quickly has prompted them to take carload tonnages from local jobbers, thereby strengthening the warehouse market. The movement of bars also has been active. In Louisville severe competition on common wire nails has brought the price down to \$2.85 per keg, but the local quotation of \$2.95 remains unaffected. Quotations on other commodities are steady and unchanged.

### Warehouse Prices, f.o.b. Buffalo

	Base per Lb.
Plates and structural shapes.....	3.40c.
Mild steel bars.....	3.30c.
Cold-finished shapes.....	4.45c.
Rounds.....	3.95c.
No. 28 black sheets.....	4.45c.
No. 10 blue annealed sheets.....	3.80c.
No. 28 galvanized sheets.....	5.60c.
Common wire nails, base per keg.....	\$3.90
Black wire, base per 100 lb.....	3.90



## Warehouse Prices, f.o.b. Cincinnati

	Base per Lb.
Plates and structural shapes....	3.40c.
Bars, mild steel or iron.....	3.20c. to 3.30c.
Reinforcing bars.....	3.20c. to 3.30c.
Hoops.....	4.00c. to 4.25c.
Bands.....	3.95c.
Cold-finished rounds and hexagons	3.85c.
Squares.....	4.35c.
Open-hearth spring steel.....	4.75c. to 5.00c.
No. 28 black sheets.....	4.10c. to 4.30c.
No. 10 blue annealed sheets.....	3.60c.
No. 28 galvanized sheets.....	5.25c. to 5.40c.
Structural rivets.....	3.75c.
Small rivets.....	.65 per cent off list
No. 9 annealed wire, per 100 lb.....	\$3.00
Common wire nails, base per keg.....	2.95
Cement coated nails, base per 100-lb. keg..	3.15
Chain, per 100 lb.....	7.55
Net per 100 Ft.	
Lap welded steel boiler tubes, 2-in.....	\$18.00
4-in.....	38.00
Seamless steel boiler tubes, 2-in.....	19.00
4-in.....	39.00

**Finished Material.**—The volume of business continues above normal for the midsummer season. At least one district selling office reports that specifications and orders this month are the largest this year, while other producers are gratified at the upward trend of sales. The buying spurt applies to material for prompt delivery, and only a few consumers are interested in contracting for their needs beyond 30 to 40 days. Undoubtedly the increased demand from both jobbers and fabricators, who have been the principal buyers in the past two weeks, has served as a stabilizing influence upon prices. However, the tonnage from industry in general has held up well. Particularly encouraging is the outlook in both the steam and electric railroad fields. Fabricators, especially in the South, are amply supplied with work and have been important factors in the structural market. Although sales of bars have been confined to small lots in the past week, prices have been maintained at 2c. to 2.10c., base Pittsburgh. However, there have been isolated instances in which single carloads have been offered at 2c. The Big Four railroad is reported to have placed its third quarter plate requirements, totaling about 1100 tons, at 1.90c., base Pittsburgh, the regular schedule. Sales of sheets have fallen off slightly, but prices are steadier. The market on wire goods is sluggish. Common wire nails are selling at \$2.65 per keg, Pittsburgh or Ironton, and plain wire at \$2.50 per 100 lb., Pittsburgh or Ironton.

**Old Material.**—Speculation among dealers, rather than a better demand from consumers, has resulted in an advance of 50c. a ton on heavy melting steel. A number of other items also show a corresponding increase. Mills in this district have paid a slight premium on material for spot shipment, and are taking a generous amount of scrap on contract. Little interest has been manifested in foundry grades.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

Per Gross Ton	
Heavy melting steel.....	\$13.00 to \$13.50
Scrap rails for melting.....	13.00 to 13.50
Short rails.....	18.00 to 18.50
Relaying rails.....	27.00 to 27.50
Rails for rolling.....	14.00 to 14.50
Old car wheels.....	13.00 to 13.50
No. 1 locomotive tires.....	17.00 to 17.50
Railroad malleable.....	15.50 to 16.00
Agricultural malleable.....	14.50 to 15.00
Loose sheet clippings.....	7.50 to 8.00
Champion bundled sheets.....	9.50 to 10.00
Per Net Ton	
Cast iron borings.....	7.00 to 7.50
Machine shop turnings.....	6.50 to 7.00
No. 1 machinery cast.....	17.00 to 18.00
No. 1 railroad cast.....	14.50 to 15.00
Iron axles.....	20.00 to 20.50
No. 1 railroad wrought.....	9.50 to 10.00
Pipes and flues.....	8.00 to 8.50
No. 1 busheling.....	9.50 to 10.00
Mixed busheling.....	7.00 to 7.50
Burnt cast.....	7.50 to 8.00
Stove plate.....	9.50 to 10.00
Brake shoes.....	10.00 to 10.50

**Coke.**—By-product foundry coke will remain undisturbed at \$7.50, ovens, or \$9.64, delivered Cincinnati, during August. The price of by-product domestic coke also will be the same next month, with egg and walnut sizes at \$7.14, delivered here, and No. 2 nut at \$6.64. Sales in the past week totaled a moderate tonnage in the aggregate, but no single transaction exceeded 250 tons. Specifications for by-product foundry coke in

July were about 5 per cent less than those in June, but showed a slight increase as compared with the same month last year.

Based on freight rates of \$2.14 from Ashland, Ky., \$3.53 from Connellsville, and \$2.59 from Wise County ovens and New River ovens, we quote f.o.b. Cincinnati: Connellsville foundry, \$7.53 to \$9.53; Wise County foundry, \$7.09; New River foundry, \$9.59 to \$10.09; by-product foundry, \$9.64.

## Seattle

## Steel Demand Recedes—Low Prices on Foreign Pig Iron

**SEATTLE, July 22.**—Conditions in the local steel trade have quieted down considerably this month. Two local jobbers state that their bookings so far in July have shown a large falling off as compared with July of last year. Sales managers of Eastern steel companies say there is only fair new business in sight, and look for a quiet market during the next several months.

**Pig Iron.**—A consignment of about 600 tons of foreign iron of foundry grade is due here any day, and the importer of it is naming prices \$3 to \$4 per ton under the market for domestic iron. The local sales agency for Utah iron is quoting \$25 to \$26, delivered Seattle, for basic and foundry grades.

**Shapes.**—No large jobs are in sight, but a fair amount of small work is coming out. Plans for a new Orpheum theater are to be ready July 26, but this will be largely of concrete construction, and only 400 tons of shapes will be required. A highway bridge, 170 tons; two stand pipes at Bend, Ore., 300 tons; and a warehouse for the Northern Pacific at Spokane, Wash., 150 tons, are some of the projects coming up. The Minneapolis Steel & Machinery Co. has taken a substation for the Great Northern at Skykomish, Wash., 150 tons. The ruling price on beams and channels is 2.35c., Seattle.

**Plates.**—No large work is in sight, and new demand is small. Reports are that Seattle will vote on a bond issue in the near future to secure funds to replace old wooden water lines with steel or cast iron. Plates in carload lots are selling at 2.30c., Seattle, but on any large and desirable tonnage this price could be shaded at least \$1 per ton.

**Sheets.**—New demand for galvanized and blue annealed is fairly active but for black is quiet. Prices do not improve, but several Eastern mills now refuse to meet the low prices ruling in the local market. Minimum prices on No. 28 galvanized are 4.835c., No. 10 blue annealed, 2.835c., and No. 28 black, 3.685c., delivered Seattle. These prices carry about 63½c. for freight and other charges.

**Steel Bars.**—Demand is only fair, but prices are steady on the basis of 2.35c., delivered Seattle. Reinforcing bars are quoted at about 2.50c., but this price has been materially shaded. The Northwest Rolling Mills, Seattle, is a new producer of reinforcing bars in the local market.

**Wire Products.**—Demand for wire nails is active but for wire is quiet. Very little business in wire products is being done by Eastern mills in the local market, as the freight rates are against them as compared with the San Francisco producers. Wire nails are quoted at \$3.20 per keg, delivered Seattle, in carloads of 80,000 lb.

**Hoops and Bands.**—Demand is better, and prices are firm on the basis of 2.90c. per lb., delivered Seattle.

## Warehouse Prices, f.o.b. Seattle

	Base per Lb.
Structural shapes.....	3.35c.
Steel bars.....	3.35c.
Plates, tank.....	3.25c.
Hoops.....	4.50c.
Bands.....	4.25c.
Reinforcing bars.....	3.00c.
Machine steel.....	3.75c.
Common wire nails, base per keg.....	\$3.50
Cement coated nails, base per keg.....	3.00
Rivets, tank.....	.50 per cent off list
Rivets, button head, base per 100 lb.....	\$5.00
Rivets, cone head, base per 100 lb.....	5.20
Bolts, carriage, all sizes.....	.40 per cent off list

## NON-FERROUS METAL MARKETS

**The  
Week's  
Prices**  
  
Cents per Pound  
for  
Early Delivery

	July 21	July 22	July 23	July 24	July 26	July 27
Lake copper, New York.....	14.25	14.37½	14.37½	14.37½	14.37½	14.37½
Electrolytic copper, N. Y.*..	14.00	14.00	14.00	14.00	14.00	14.12½
Straits tin, spot, New York..	63.25	63.25	63.50	63.50	63.75	63.50
Lead, New York.....	8.65	8.70	8.85	8.85	8.90	8.90
Lead, St. Louis.....	8.50	8.55	8.70	8.70	8.70	8.70
Zinc, New York.....	7.80	7.85	7.82½	7.80	7.80	7.82½
Zinc, St. Louis.....	7.45	7.50	7.47½	7.45	7.45	7.47½

\*Refinery quotation; delivered price ¼c. higher.

NEW YORK, July 27.—Pronounced strength characterizes all the markets with prices tending higher and demand fairly active. Buying of copper and lead has been rather substantial, accompanied by higher quotations. The tin market continues to advance, although demand is light. The zinc market is very quiet, but decidedly firm.

**Copper.**—Sustained buying by domestic consumers nearly every day has resulted in a stronger price situation, though any actual advance did not take place until yesterday and today. Most of the metal which has been booked was taken at 14.25c., delivered, with some yesterday at 14.30c. The market today is considered at a minimum of 14.37½c., with some metal sold for Western delivery at 14.50c. Sales in general have called for September-October delivery and it develops that there is some scarcity in nearby positions, with metal for August hard to obtain in large quantities. Export demand is moderate, but prices are firm and in keeping with those for domestic consumption. Statistically the market is strong and the undertone is better than it has been for a long time. Lake copper is quoted at 14.37½c., delivered, with the tendency higher in sympathy with electrolytic.

**Tin.**—Sales for the week have been very light and the few that were made were confined to Thursday and Friday, July 22 and 23. On those days some distress parcels were disposed of and on one day there were sales of futures at 62.95c. to 63.12½c. for November delivery. With arrivals very heavy this month, it is expected in the trade that American deliveries into consumption will approximate 7500 tons, and that there

will be a decrease in the world's visible supply of 1000 to 2000 tons by the end of the month. The market today has been very quiet, with Straits tin quoted at 63.50c., New York. Quotations continue to advance in London and today were £4 to £5 per ton higher than a week ago, with spot standard quoted at £289 7s. 6d., future standard £284 5s. and spot Straits at £299 7s. 6d. The advance there is due in part to the reduction in warehouse stocks in London. The Singapore price today was £292 10s. Arrivals thus far this month have been 7355 tons, with 4290 tons reported afloat.

**Lead.**—Fairly steady buying here and advancing prices in London have been the chief points of interest during the week, with the exception of two advances by the American Smelting & Refining Co. On July 23 that company advanced its New York contract price from 8.50c. to 8.65c. and late yesterday from 8.65c. to 8.75c. The outside market is even stronger and higher with quotations ranging from 8.70c. to 8.75c., St. Louis, and 8.90c. to 8.95c., New York.

**Zinc.**—The market has been exceedingly quiet with interest on the part of consumers largely lacking and with pressure from buyers at a low ebb. The strength of the market consists in the latter fact and the opinion is expressed that, as long as producers can remain somewhat independent, the market will continue strong. Buying by galvanizers has been only moderate and prime Western zinc has been quoted practically each day at a range of 7.45c. to 7.50c., St. Louis, or 7.80c. to 7.85c., New York. Business was done today at 7.47½c., St. Louis.

**Nickel.**—Ingot nickel in wholesale lots is quoted at 35c. with shot nickel at 36c. per lb. Electrolytic nickel is quoted at 39c.

**Antimony.**—The unsettled conditions, due to war

### Metals from New York Warehouse

Delivered Prices per Lb.

Tin, Straits pig.....	64.50c. to 65.00c.
Tin, bar.....	67.00c. to 68.00c.
Copper, Lake.....	15.25c.
Copper, electrolytic.....	15.00c.
Copper, casting.....	14.75c.
Zinc, slab.....	8.50c. to 9.00c.
Lead, American pig.....	9.25c. to 9.75c.
Lead, bar.....	11.50c. to 12.50c.
Antimony, Asiatic.....	15.00c. to 16.00c.
Aluminum, No. 1 ingot for remelting (guaranteed over 99 per cent pure).....	30.00c. to 30.50c.
Babbitt metal, commercial grade.....	30.00c. to 35.00c.
Solder, ½ and ¼ guaranteed.....	39.50c.

### Metals from Cleveland Warehouse

Delivered Prices per Lb.

Tin, Straits pig.....	68.25c.
Tin, bar.....	71.25c.
Copper, Lake.....	15.00c.
Copper, electrolytic.....	15.00c.
Copper, casting.....	14.00c.
Zinc, slab.....	8.50c.
Lead, American pig.....	9.00c.
Antimony, Asiatic.....	16.50c.
Lead, bar.....	11.25c.
Babbitt metal, medium grade.....	22.50c.
Babbitt metal, high grade.....	73.50c.
Solder, 50-50.....	41.25c.

### Rolled Metals from New York or Cleveland Warehouse

Delivered Prices, Base per Lb.

<b>Sheets—</b>	
High brass.....	19½c. to 20¼c.
Copper, hot rolled.....	22¾c. to 23¼c.
Copper, cold rolled, 14 oz. and heavier.....	25c. to 26c.
<b>Seamless Tubes—</b>	
Brass.....	24c. to 25c.
Copper.....	24¼c. to 26¼c.
Brazed Brass Tubes.....	27¼c. to 28¼c.
Brass Rods.....	16½c. to 17½c.

From New York Warehouse

Delivered Prices, Base per Lb.

Zinc sheets, (No. 9), casks.....	13.25c.
Zinc sheets, open.....	13.75c.

### Non-Ferrous Rolled Products

Mill prices on bronze, brass and copper products have not changed since July 16. Zinc sheets are unchanged since July 20, while lead full sheets were advanced ¼c. on July 26, and are now quoted at 12.50c. to 12.75c.

#### List Prices Per Lb., f.o.b. Mill

On Copper and Brass Products, Freight up to  
75c. Per 100 Lb. Allowed on Shipments  
of 500 Lb. or Over

#### Sheets—

High brass.....	19.12½c.
Copper, hot rolled.....	22.75c.
Zinc.....	11.75c.
Lead (full sheets).....	12.50c. to 12.75c.

#### Seamless Tubes—

High brass.....	24.00c.
Copper.....	24.75c.

#### Rods—

High brass.....	16.87½c.
Naval brass.....	19.62½c.

#### Wire—

Copper.....	16.12½c.
High brass.....	19.62½c.
Copper in Rolls.....	21.62½c.
Brazed Brass Tubing.....	27.12½c.

#### Aluminum Products in Ton Lots

The carload freight rate is allowed to destinations east of the Mississippi River and also allowed to St. Louis on shipments to destinations west of that river.

Sheets, 0 to 10 gage, 3 to 30 in. wide.....	37.50c.
Tubes, base.....	48.00c.
Machine rods.....	34.00c.



**Rolled Metals, f.o.b. Chicago Warehouse**

(Prices Cover Trucking to Customers' Doors in City Limits)

Sheets—		Base per Lb.
High brass	.....	18 3/4 c. to 19 1/4 c.
Copper, hot rolled	.....	22 1/2 c.
Copper, cold rolled, 14 oz. and heavier	.....	24 1/4 c.
Zinc	.....	12 1/2 c.
Lead, wide	.....	11.25 c.
Seamless Tubes—		
Brass	.....	23 1/4 c. to 25 c.
Copper	.....	24 1/4 c. to 25 1/4 c.
Braced Brass Tubes	.....	26 1/4 c. to 29 1/4 c.
Brass Bods	.....	16 1/4 c.

and floods in China, continue to make shipments of antimony more uncertain. As a result Chinese metal has advanced during the week and is quoted at 16c. for spot delivery and at 15c. to 15.50c. for future shipments.

**Aluminum.**—Virgin metal, 98 to 99 per cent pure, is obtainable as ingots at 27c. to 28c. per lb., delivered.

**JULY 27.**—This market remains active and prices are steady with the exception of tin, which is lower than a week ago. The demand for old metals is good and prices are unchanged. We quote, in carload lots, Lake copper, 14.50c.; tin, 64.50c.; lead, 8.75c.; zinc,

**Old Metals, Per Pound, New York**

The buying prices represent what large dealers are paying for miscellaneous lots from the smaller accumulators, and the selling prices are those charged consumers after the metal has been properly prepared for their uses.

	Dealers' Buying Prices	Dealers' Selling Prices
Copper, heavy crucible	12.00c.	13.25c.
Copper, heavy and wire	11.50c.	12.25c.
Copper, light and bottoms	9.75c.	11.00c.
Brass, heavy	7.25c.	9.00c.
Brass, light	6.25c.	8.00c.
Heavy machine composition	8.75c.	10.00c.
No. 1 yellow brass turnings	8.50c.	9.25c.
No. 1 red brass or composition turnings	8.00c.	9.00c.
Lead, heavy	7.75c.	8.00c.
Lead, tea	5.75c.	6.50c.
Zinc	4.25c.	4.75c.
Sheet aluminum	17.00c.	19.00c.
Cast aluminum	17.00c.	19.00c.

7.65c.; in less than carload lots, antimony, 17c. On old metals we quote copper wire, crucible shapes and copper clips, 10.50c.; copper bottoms, 9.50c.; red brass, 9c.; yellow brass, 7.75c.; lead pipe, 7c.; zinc, 5c.; pewter, No. 1, 35c.; tin foil, 43.50c.; block tin, 52c.; aluminum, 17.75c., all being dealers' prices for less than carload lots.

**REINFORCING STEEL****Awards of 8600 Tons Include 1300 Tons for a Convention Hall in Atlantic City**

Awards of concrete reinforcing bars in the week, as reported to THE IRON AGE, totaled 8600 tons, the largest being 1300 tons for the Convention Hall in Atlantic City. A cold storage building for the Baltimore & Ohio Railroad in Philadelphia, a building for the Delco Light Co. at Moraine City, Ohio, and a job for the A. E. Staley Mfg. Co. at Decatur, Ill., took 1000 tons each. Jobs pending total 1900 tons, not including a large office building in Chicago for which the tonnage is being estimated. Awards follow:

- FITCHBURG, MASS., 165 tons, mill No. 90, to Joseph T. Ryerson & Son, Inc., Boston.
- NEW YORK, 400 tons rerolled bars, viaduct, St. Clair Place and 137th Street, for New York Central Railroad, to Edwards Mfg. Co., Inc.
- ATLANTIC CITY, N. J., 1300 tons, Convention Hall, to Concrete Steel Co.
- PHILADELPHIA, 115 tons, Olney school annex, to American Steel Engineering Co.
- PHILADELPHIA, 1000 tons, cold storage building for Baltimore & Ohio Railroad, to McClintic-Marshall Co.
- BOYERTOWN, PA., 350 tons, building for Boyertown Casket Co., to McClintic-Marshall Co.
- RICHMOND, VA., 100 tons, warehouse, to McClintic-Marshall Co.
- NORTH CAROLINA, 400 tons, State highway road work, to Jones & Laughlin Steel Corporation.
- MORAINES CITY, OHIO, 1000 tons, building for Delco Light Co., to West Virginia Rail Co., Huntington, W. Va.
- FAIRPORT, OHIO, building for R. C. Tomson, to Pattison Leich Co.
- CLEVELAND, 600 tons, Motors Realty Co., building, to Kalman Steel Co.
- CLEVELAND, 125 tons, Auditorium Hotel, to Pattison Leich Co.
- JOLIET, ILL., 130 tons of rail steel, Corlett Building, to Calumet Steel Co.
- CHICAGO, 100 tons of rail steel, building for James Schedden, to Inland Steel Co.
- WAUKEGAN, ILL., 120 tons, Morrow Garage, to Concrete Steel Co.
- DECATUR, ILL., 1000 tons of rail steel for A. E. Staley Mfg. Co., to Laclede Steel Co.
- OSHKOSH, WIS., 200 tons, warehouse for Kimberly Clark Co., to Olney J. Dean & Co.
- MADISON, WIS., 180 tons, church, to Concrete Engineering Co.
- MADISON, 500 tons, sewage treating plant, to Concrete Engineering Co.
- SEATTLE, 500 tons, Eyres warehouse, to Pacific Coast Steel Co.
- SEATTLE, 450 tons, McDowell Building, to Pacific Coast Steel Co.

**Reinforcing Bars Pending**

Inquiries for reinforcing steel bars include the following:

- ASBURY PARK, N. J., 300 tons, public utility office building, general contract to Dwight P. Robinson & Co., Inc.
- ATLANTIC CITY, N. J., tonnage not estimated, Seaside Hotel.
- PHILADELPHIA, 100 tons, administration building for Philadelphia General Hospital.
- CLEVELAND, 400 tons, building for Willard Storage Battery Co.
- WAUKEGAN, ILL., theater, tonnage being estimated, Edward P. Steinberg, architect.
- CHICAGO, Mather Building, tonnage being estimated; W. A. Illsley, general contractor.
- CHICAGO, building for Gazelka & Gazelka, plans revised so that 216 tons will be rail steel and 303 tons new billet steel.
- CHICAGO, 700 tons, office building at Adams and Franklin Streets; Alfred F. Alschuler, architect.
- STOCKTON, CAL., 200 tons, Medico-Dental Building; Steel Service Co. low bidder.

**Prospects in Automobile Industry**

Total production of passenger cars and trucks in July will run approximately 10 to 15 per cent lower than in June, *Automotive Industries* estimates. This rate will compare with the best production ever achieved in this month. August production is expected to maintain about the same general pace as July.

Under the stimulus of extremely hot weather the demand for used cars has increased considerably. Dealers will go into August with used car stock generally lower. Developments of gasoline substitutes in a number of countries is resulting in increased use of motor trucks and buses, with consequent increased shipments of these from the United States.

**Machinery Exports in June**

WASHINGTON, July 27.—Exports of industrial machinery from the United States during June were valued at \$11,114,816 as against \$10,974,403 for June, 1925, and \$12,273,853 for May, 1926. Metal-working machinery exports for June were valued at \$1,382,444 as compared with \$1,788,502 in June of last year and \$1,319,240 in May of the present year. Power-driven metal-working machinery to the value of \$1,024,252 and "other metal working machinery" to the value of \$358,192 were exported in June.

The Ohio State Foundrymen's Association has selected Cincinnati as its meeting place this year and will hold a two-day session at the Hotel Sinton in that city Sept. 16 and 17. An entertainment program is being arranged for by the Cincinnati foundrymen.



Arthur A. Fowler,  
New York, President



G. A. Crocker, New  
York, First Vice-  
President



Charles H. Newcomb,  
Philadelphia, Second  
Vice-President



Edwin Raum, New  
York, Treasurer

### The New Organization of Rogers, Brown & Crocker Brothers, Inc.

THE personnel of Rogers, Brown & Crocker Brothers, Inc., following the recent resignation of D. Fairfax Bush as chairman of the board and the retirement of Daniel B. Meacham, J. K. Pollock and W. T. Shepard, is shown in the accompanying illustrations.

The active head of the organization, the sales activities of which in pig iron, coke, ferroalloys, etc., cover most of the eastern half of the United States, is Arthur A. Fowler, president. Mr. Fowler joined the firm of Rogers, Brown & Co. in 1905 as resident partner in New York and remained in that capacity until the merger with Crocker Brothers on July 1, 1925, when he was elected president of the succeeding corporation. Mr. Fowler's other business activities are largely in insurance, he being a director of the Equitable Life Insurance Co.; the Fidelity Phoenix Fire Insurance Co. and the Northern Insurance Co.

George A. Crocker, Jr., who is first vice-president, was a partner for many years in the firm of Crocker Brothers, being a son of one of the original partners.

Charles H. Newcomb, Philadelphia, who was elected second vice-president, was made manager of Crocker Brothers' Philadelphia office in 1905; several years later he was admitted to the firm. Prior to his connection with Crocker Brothers he was with the Phoenix Iron Co. In 1889 he became associated with the New York office of Matthew Addy & Co., pig iron merchants. Since the merger of Rogers, Brown & Co. and Crocker Brothers, Mr. Newcomb has been resident vice-president in Philadelphia.

Edwin Raum, New York, secretary-treasurer, became connected with the Cincinnati office of Rogers, Brown & Co. in 1902. From 1906 to 1916 he was with the Iroquois Iron Co., Chicago, a part of that time as

secretary and assistant treasurer. In 1916 he returned to Cincinnati for Rogers, Brown & Co., and when the merger of the two pig iron selling companies was effected he was elected secretary-treasurer, with headquarters in New York.

L. H. Miller, resident vice-president in New York, was for many years New York partner in the pig iron selling firm of Reed, Fears & Miller, which was absorbed by Crocker Brothers about two years ago. He continued with Crocker Brothers, and since the merger has been in charge of New York district sales.

Mr. Miller is a direct descendant of Joseph Jenks, who is said to have prepared the molds for the first castings made at an iron furnace at Lynn, Mass., about 1642. This furnace was one of the first in America.

Charles A. Reed, Boston, vice-president, has been in the pig iron trade since 1893, when he entered the employ of N. S. Bartlett & Co. He remained with that firm until it dissolved in 1910, and then became associated with Hickman, Williams & Co. Two years later he and Mr. Fears formed a partnership under the name of Reed & Fears, and a few months later took L. H. Miller into the firm. In 1917 the business was incorporated under the firm name of Reed, Fears & Miller, Inc., and remained as such until it was absorbed by Crocker Brothers.

George R. Sullivan, resident vice-president in Philadelphia, joined the Philadelphia office of Rogers, Brown & Co. in 1900, prior to which time he was with the Cincinnati office, then the headquarters of the firm. In 1914 he was appointed resident manager of Rogers, Brown & Co. in Philadelphia and has continued in that capacity with the combined company.

Thomas A. Wilson, who became Pittsburgh vice-



L. H. Miller, New  
York, Vice-President



Charles A. Reed,  
Boston, Vice-  
President



George R. Sullivan,  
Philadelphia, Vice-  
President



Thomas A. Wilson,  
Pittsburgh, Vice-  
President





*Fred W. Bauer, Chicago, Vice-President*



*Harwood Wilson, Cleveland, Vice-President*



*S. B. Morison, St. Louis, Mo., Vice-President*



*F. W. Miller, Cincinnati, Vice-President*

president, was appointed Pittsburgh resident manager in 1914 of Rogers, Brown & Co., and continued in that capacity with the new company. His entire business life has been in the Pittsburgh office of Rogers, Brown & Co. and its successor. He began in 1896 as an office boy. Later he became a stenographer and then a salesman. He served under the late Howard M. Hook, George P. Bassett and the late James R. Darragh, whom he succeeded as resident manager.

Fred W. Bauer, resident manager at Chicago for Rogers, Brown & Crocker Brothers, Inc., was elected resident vice-president, continuing in Chicago. In 1903 he became associated with Rogers, Brown & Co., having previously served as blast furnace metallurgist. After several years in Cincinnati, he was transferred to the sales office at St. Louis and shortly afterward returned to Cincinnati, to take charge of sales in the Detroit territory. In 1923 he went to Chicago as resident manager. He has prepared several papers on metallurgical subjects for the American Foundrymen's Association.

Harwood Wilson, Cleveland vice-president, has been connected with Rogers, Brown & Co. and its successor for 24 years, all but two of which he has spent in the Cleveland office. He served three years as secretary to Mayor James M. Head of Nashville. Leaving the po-

litical field, he went to Boston in 1902 as a salesman for Rogers, Brown & Co. In 1904 he was transferred to Chicago and in the same year he became manager of the firm's Cleveland sales office jointly with Sterling W. Hubbard. Mr. Hubbard withdrew in 1920, and Mr. Wilson has had charge of the Cleveland office since that time.

S. B. Morison, elected resident vice-president for the St. Louis district, was formerly in the sales department of the Philadelphia office of Rogers, Brown & Co., and a few years ago was sent to St. Louis to take charge of the office there. He continued as resident manager after the merger of Rogers, Brown & Co. with Crocker Brothers.

F. L. Miller, elected vice-president and director of Rogers, Brown & Crocker Brothers, Inc., was associated with the Cincinnati office of Rogers, Brown & Co. for 32 years previous to the merger with Crocker Brothers. He started with the company in 1892 as a telegraph operator and gradually transferred his activities to the sales department, finally rising to the position of general sales manager. When the consolidation of the two companies occurred, he continued his connection with the Cincinnati sales office, and now has active charge of that territory. Mr. Miller is a native of southeastern Indiana, and has lived in or near Cincinnati all of his life.

### Swedish Ore and Other Foreign Trade

WASHINGTON, July 27.—Exports of iron ore from Sweden in June totaled 687,000 tons while the outgoing movement of iron and steel amounted to 14,880 tons, according to a cablegram received by the Department of Commerce from Commercial Attaché Klath, Stockholm. Exports of iron and steel to the United States from Sweden in June were valued at \$423,000 as against \$363,000 in May. Imports of iron and steel into Sweden during June totaled 21,793 tons compared to 25,505 tons in May.

### Subsidy for German Iron Mines

WASHINGTON, July 27.—Increased output and meeting of Swedish competition are given as the purposes behind the decision of the German Reich and the States of Prussia and Hesse to subsidize local iron ore production, according to a report received by the Department of Commerce from Trade Commissioner Daugherty, Berlin. The effect of the subsidy is expected in Germany to permit more intensive operation by the more profitable works and close down those that are not competitive at present, it is stated. The plan is said to be to indemnify the association of producers in areas affected at the rate of 2 marks per ton. Areas benefiting are the Siegerland (Prussia) and Dill, Lahn and Vogelsberg. The term of the subsidy is six months. As a current production of 50,000 to 55,000 tons month-

ly can be increased to 170,000 tons, the report says, it is estimated in Germany that the six-month subsidy will cost around 2,000,000 marks. The Siegerland mines have received State help on past occasions. Before the war their ore was accorded "special preferential" freight rates.

### Weirton Expansion Program Progressing

The Weirton Steel Co., Weirton, W. Va., which is engaged in a \$20,000,000 plant expansion program, expects to be making steel in its new open-hearth furnaces by the latter part of the new month. The new furnaces are 150-ton units. Erection of a new ore bridge and car dumper is nearing completion, and this equipment will be ready for use in about two weeks. A new 800-ton blast furnace, a battery of 49 by-product coke ovens, and the new dock to accommodate incoming raw materials and river shipments of steel, present indications are, will be finished by the end of the year. The new wide strip mill, which was projected early this year, will not be ready for operation much before next spring. The product is to be called strip sheet steel, and the plant is to be known as the strip sheet mill.

The thirtieth anniversary of the corrugated culvert is being celebrated this year by the Armco Culvert and Flume Manufacturers Association, Middletown, Ohio.

## PERSONAL

R. H. Sproat has been appointed superintendent of Newburgh Wire Works of the American Steel & Wire Co., effective Aug. 1, to succeed A. W. Hitz, who will retire after 50 years' association with the wire manufacturing industry in plants of the American Steel & Wire Co. and their former owners in Cleveland. Mr. Sproat has been assistant superintendent of the Newburgh Wire Works and will be succeeded in that position by Charles Malone. Mr. Sproat started as a stenographer in the plant of the American Coke Co., Pittsburgh, which became a Steel Corporation plant. From there he was transferred to the office of the vice-president and general superintendent of the American Steel & Wire Co. in Pittsburgh, where he remained several years. His next promotion was to the position of chief clerk in the office of the district manager of the wire mills in Cleveland. In that capacity he served under both Robert W. Ney and J. Waldeck. He was transferred to the Newburgh wire mills as assistant superintendent April 1, 1924.

Mr. Hitz went to work in the Newburgh Wire Works, then the plant of the Cleveland Rolling Mill Co., at the age of 17. In 1887 he joined the American Wire Mill Co., now the American Works of the American Steel & Wire Co., and in the following year was made foreman of the fine wire department. In 1901 he became assistant superintendent of the American plant and in 1905 was made superintendent. In 1909 he was transferred to the superintendency of the Newburgh Wire Works, which he has since retained. Last February he was granted a six months' vacation, three months of which he spent in California. Mr. Hitz developed various improvements in processes of manufacturing fine wire.

In recognition of Mr. Hitz's retirement a dinner was given in his honor by American Steel & Wire Co. officials a few days ago, at which time he was presented with a gold watch by the company and a loving cup by foremen and assistant foremen. Those who paid tribute to Mr. Hitz in brief remarks were H. A. Barren, general superintendent and J. Waldeck, assistant general superintendent of the company; W. L. Hayes, manager of the wire mills of the Cleveland district; S. W. Tener, head of the company's accident pension bureau; A. W. Hickman, chief clerk of the Newburgh works, and R. H. Sproat.

Fritz J. Frank, president of the Iron Age Publishing Co., has been elected president of the United Publishers Corporation, New York, of which THE IRON AGE organization is a subsidiary. Mr. Frank succeeds Charles G. Phillips, while A. C. Pearson, who was vice-president of the United Publishers Corporation, has been made chairman of the board, a newly created office.

Ralph Simpson, formerly with the Potter & Johnson Machine Co., has been appointed sales manager of the Leon J. Barrett Co., Worcester, Mass.

E. J. Billings was recently elected vice-president in charge of sales Fuller-Lehigh Co., Fullerton, Pa. He was formerly with Henry L. Doherty Co., New York.

Harry Hardwicke, for many years district manager, Chicago district, for Atlas Steel Corporation, Dunkirk,

N. Y., has been elected a vice-president of the corporation.

Charles J. Murray has recently resigned from the staff of the Linde Air Products Co., to become associated with the Oklahoma Contracting Co. He is now organizing a new division of that concern to engage exclusively in oxwelded pipe line construction.

W. W. Sebald, assistant vice-president American Rolling Mill Co., Middletown, Ohio, was elected a vice-president at the directors' meeting, held July 15, 1926.

George L. Bascome, former consulting engineer in Public Utility circles and in the coal fields of northeastern Pennsylvania, has recently become affiliated with the National Valve & Mfg. Co., Pittsburgh, Pa., manufacturer and contractor for high pressure steam piping systems. He will travel the entire country in the capacity of contact engineer.

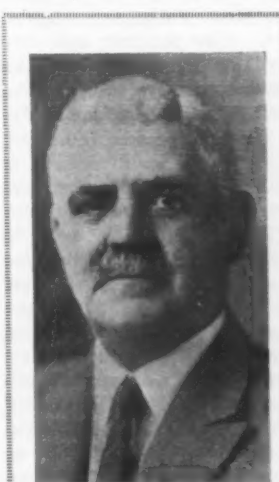
Ivan Stewart Forde, who was manager of the small turbine division of Westinghouse Electric & Mfg. Co., for a number of years, and for the past three years manager of the sales promotion department of Diamond Power Specialty Corporation, has resigned to become affiliated with the Furnace Engineering Co., manufacturer of the Simplex unit pulverizer, as sales manager, with headquarters at 5 Beekman Street, New York.

Jay C. McLauchlan, member of the firm of Pickands, Mather & Co., Cleveland, and formerly chief of the pig iron section of the War Industries Board, sailed July 24 for a pleasure trip to Europe.

H. H. Pleasance has resigned as vice-president and sales manager of the United Alloy Steel Corporation, Canton, Ohio, and will become affiliated with the Bourne-Fuller Co., Cleveland.

Michael Gallagher, who has resigned as head of the bituminous coal mining department of the M. A. Hanna

Co., Cleveland, to become associated with the Van Sweringen interests to make a survey of the coal situation, as announced last week in THE IRON AGE, was identified with the coal mining industry in eastern Ohio for many years, and was interested in the promotion and development of many of the larger coal mining companies operating that field. He has also been operating bituminous mines in Pennsylvania and West Virginia and for several years has been vice-president of the Susquehanna Collieries Co., producing a large tonnage in the anthracite field. He is a director of the Becker



M. GALLAGHER

Steamship Co., Cleveland; vice-president of the National Coal Association; for many years was president of the Pittsburgh Vein Operators' Association of Ohio, and is now a member of the executive committee of that association and chairman of its grievance committee. He has been a leading figure in the negotiations of wage agreements between miners and operators for a long period. He is a member of the Union, Country, Athletic and Mid-day Clubs of Cleveland; Duquesne Club of Pittsburgh; Fort Henry Club of Wheeling; and Ohio Society of New York.

Robert McDougal, formerly president of the Chicago Board of Trade, has been elected president of the Maryland Car Wheel Co., Baltimore. He succeeds Arthur Gregg Wellington, deceased.



W. J. Hammond has been appointed traffic manager, Inland Steel Co., succeeding the late C. L. Lingo. Mr. Hammond has been assistant traffic manager of the Inland Steel Co. for the past eight years. Prior to that he was with the Illinois Central Railroad in the capacity of contracting freight agent. He filled the same position for the Union Pacific, and later was made traveling freight agent.

E. P. Thomas, president United States Steel Products Co., has returned from a trip to South America.

Clarence G. Stoll, whose election to the vice-presidency of the Western Electric Co., to succeed the late H. F. Albright, was announced in THE IRON AGE of June 24, has been with the company since 1903. Beginning at its Hawthorne Works, Cicero, Ill., immediately after his graduation from Pennsylvania State College, where he was famed as a football player, he rose rapidly in the executive branch of the apparatus design department, which he headed for six years. Later he was transferred to the New York plant, remaining there until the outbreak of the war, when he served over seas. Since that time he has been operating superintendent, technical superintendent, assistant general superintendent and works manager of the Hawthorne plant.

C. F. McLain has been appointed manager of the recently established Detroit office of the Pittsburgh Steel Co., located in the General Motors Building. He has been with the Pittsburgh Steel Co. since 1912. For six years he was a fence salesman in the Middle West, and since then has been calling on the manufacturing and jobbing trade, for three years in the Minneapolis-St. Paul district, and since 1922 in Iowa, Nebraska and western Illinois.



C. F. McLain

Ivan Racheff has been recently appointed metallurgical engineer for the Racine Radiator Co., Racine, Wis., in connection with chemical and metallurgical research in power unit, industrial, truck and heavy-duty type radiator manufacturing.

## OBITUARY

ROBERT WASHINGTON NEY, who has been identified with the wire manufacturing industry for forty years and was manager of the Cleveland district wire



R. W. NEY

mills of the American Steel & Wire Co. for seventeen years, died July 23 at his home in Cleveland. He was born Feb. 22, 1855, in New York, and entered the wire making industry in 1879 as a laborer in the Worcester works of the Washburn & Moen Mfg. Co., later taken over by the American Steel & Wire Co. While there he received various promotions and in 1892 went to Waukegan, Ill., to become superintendent of a new plant that had just been erected by the Washburn & Moen Co. in that city. He served as superintendent of this plant until 1898, when he was transferred to Cleveland as

superintendent of the American works of the American Steel & Wire Co. In January, 1899, he was made assistant manager of the Cleveland district mills, which included five mills in Cleveland, one in Salem, Ohio, and another in Tecumseh, Mich. In 1903 he became district manager of these mills, holding that position until 1920, when, because of poor health, he retired to semi-active duty with the title of associate manager of the Cleveland district wire mills.

FRANKLIN SILAS TERRY, vice-president General Electric Co., and formerly co-manager of the company's National Lamp Works at Cleveland, died July 23 at his home at Black Mountain, N. C. He was 64 years old. With Charles W. Price, he was one of the founders of the National Electric Light Association, and at the time of his death was chairman of the National Lamp Advisory Committee.

HENRY F. SCHENCK, vice-president and treasurer Flemington Foundry Co., Flemington, N. J., was

drowned probably on July 7 near his summer home at Avon, N. J. The body was found by Coast Guard men on July 19.

CHARLES T. WILSON, traveling representative for William Sellers & Co., Inc., Philadelphia, died at his home in Haddonfield, N. J., on July 18. He was 65 years of age, and had been connected with the Sellers company for 46 years.

ALBERT M. MAY, president Peerless Automatic Machine Co., Cleveland, died July 21 at Stamford, Conn., where he had gone for his vacation. He was 70 years of age, and had been associated with the machine tool industry for 30 years.

COL. WASHINGTON A. ROEBLING, president of John A. Roebling's Sons Co., and builder of Brooklyn bridge, died July 21 at his home in Trenton, N. J. He was born at Saxonburg, Pa., May 26, 1837, the son of John A. Roebling, well known builder of suspension bridges. He was graduated as a civil engineer from Rensselaer Polytechnic Institute in 1857 and immediately became associated with his father in bridge building. His work was interrupted by the Civil War and he made a notable record in four years' service. The sudden death of his father in 1869 forced him to take complete charge of the building of the Brooklyn bridge which had just been begun. After preliminary study in Germany, Col. Roebling assumed the task with a zeal which caused serious impairment to his health in 1872. Confined to a wheel chair he was forced to view the operations on the project from the roof of his house with field glasses. The completion of the structure in 1883 brought international fame. His later years were spent in the business of wire manufacturing at Trenton, and after a temporary retirement he was called back in 1921 to become the active president of the company. Col. Roebling was well known as a mineralogist, and also as the author of a number of treatises on military suspension bridges.



W. A. ROEBLING

# Machinery Markets and News of the Works

## SOME RAILROAD BUYING

### Several Roads Place Moderate-Sized Orders for Machine Tools

Business Is Generally Better Than Is Usual for Mid-Summer, Though Volume Is Less Than in June

**R**AILROADS were conspicuous among the buyers of machine tools in the past week. No very large orders were placed, but some heavy machines were bought. The roads which placed orders were the Illinois Central, Chicago & North Western, Reading, Boston & Albany, Wabash, New York, New Haven & Hartford, Michigan Central, Burlington, and the Louisville Railway Co.

## New York

NEW YORK, July 27.

**R**EPORTS as to the volume of machine tool business in the past week are somewhat at variance, some offices having had a fairly good week, while others have done little or nothing. On the whole, the month has not been as good as June. Some fairly good railroad orders are included in the week's business. The Illinois Central added to its recent purchases by buying four floor grinders. The Reading Railroad bought a 90-in. locomotive journal turning lathe and a 48-in. carwheel borer. Other orders were as follows: Four standard and 16 special profiling machines and two 14-in. vertical surface grinders from a pattern works in Detroit; 6-ft. vertical boring and turning mill from a Los Angeles company; a 1500-lb. steam hammer from an Alabama steel company; an automatic milling machine from a Columbus, Ohio, bolt manufacturer; an automatic worm grinder from a Bloomfield, N. J., company; a 12-in. vertical shaper from a Philadelphia electrical manufacturer; two 16-in. geared-head lathes from an Ohio brass company; a 6-in. vertical shaper from a New York manufacturer, and a hand milling machine from another New York company.

Plans have been filed by the United Electric Light & Power Co., 130 East Fifteenth Street, New York, for a power house at 134th Street and Locust Avenue, Bronx, 59 x 154 ft., to cost about \$100,000 with equipment. Thomas E. Murray, Inc., 55 Duane Street, is engineer.

The Warren-Nash Motor Corporation, 229 West Sixty-fourth Street, New York, has acquired 30,000 sq. ft., bounded by Broadway, Old Broadway, 132nd and 133rd Streets, as a site for a seven-story service, repair and garage building to occupy practically the entire site, estimated to cost in excess of \$600,000 with equipment. Plans have been prepared by Parker & Shaffer, 280 Madison Avenue, architects and engineers. It is purposed to have the structure ready for occupancy in the spring. The company will discontinue its present Sixty-fourth Street service division at that time. The Ufland-Liftman Co., Inc., 299 Madison Avenue, builder, holds the adjoining plot on Broadway, aggregating 45,000 sq. ft., and plan the early construction of two large automobile service, repair and garage buildings on the site.

The Gould-Mersereau Co., 52 West Thirty-eighth Street, New York, manufacturer of rubber bindings and other rubber goods, has revised plans for a two-story plant, 90 x 210 ft., at Long Island City, estimated to cost \$150,000 with equip-

ment. Interest in the Central States centers in the large requirements of the Nordyke & Marmon Co., Indianapolis, which may be partly supplied by the purchase of used tools. A company in the automotive industry has ordered 25 special lathes. The White Motor Co., Cleveland, bought 8 or 10 machines, mostly radial drills, and the Oakland Motor Car Co., Pontiac, Mich., has bought some gear grinding equipment for its new plant. Otherwise there has not been much buying by automobile companies.

Two steel fabricating interests in the Chicago district will buy considerable equipment. The McClintic-Marshall Co., which recently bought punching and shearing machinery, has on its list about \$50,000 worth of machine tools still to be awarded. The Mississippi Valley Structural Steel Co. is preparing a list of machines for equipping new fabricating shops to be built at Melrose Park, Ill.

ment. Parker & Shaffer, 280 Madison Avenue, are architects and engineers.

The Gatineau Power Co., recently formed as a subsidiary of the International Paper Co., 100 East Forty-second Street, New York, is disposing of a bond issue of \$25,000,000, the proceeds to be used in connection with the construction of four hydroelectric generating plants on the Gatineau River, Quebec, with total capacity of 397,500 hp. The project is slated for completion in the fall of 1928. A transmission system will be built. A. R. Graustein is president of both organizations.

The National Carbon Co., 30 East Forty-second Street, New York, manufacturer of electric storage batteries, etc., has engaged Stone & Webster, Inc., 47 Milk Street, Boston, architects and engineers, to prepare plans for a group of 12 buildings at its plant at Fostoria, Ohio, from one to five stories, totaling in all about 19 acres of space. The project will cost in excess of \$3,000,000 with equipment.

Fuller-Luce, Inc., 1760 Broadway, New York, local representative for the Lincoln automobile, has plans for an eight-story service, repair and garage building, 100 x 125 ft., at 341 West Fifty-seventh Street, to cost approximately \$450,000 with equipment. Parker & Shaffer, 280 Madison Avenue, New York, are architects and engineers.

The Bronx Gas & Electric Co., 43 Westchester Square, Bronx, New York, has plans for a four-story automobile service, repair and garage building, 64 x 212 ft., to cost \$350,000 with equipment. Thomas E. Murray, Inc., 55 Duane Street, New York, is architect and engineer.

The superintendent of lighthouses, Staten Island, N. Y., is asking bids until Aug. 9 for 200 steel cylinders, 88-ft. capacity, and 200 steel cylinders, 180-ft. capacity, complete, for the transportation of compressed acetylene gas, proposal 22157.

The Otis Elevator Co., Wells Avenue, Yonkers, N. Y., is said to be considering the construction of a one-story machine shop addition. Headquarters are at Eleventh Avenue and Twenty-sixth Street, New York.

Samuel J. Kessler, 529 Cortlandt Avenue, New York, architect and engineer, has filed plans for a one-story automobile service, repair and garage building at 3835-49 Ninth Avenue, to cost about \$125,000 with equipment.

Fire, July 16, damaged a portion of the machinery and stock at the plant of the Lincoln Pipe Works, 36 Devoe Street, Brooklyn. An official estimate of loss has not been announced. The damage will be replaced.

The Mack International Motor Truck Corporation, 25 Broadway, New York, has plans for a one-story factory branch, service and repair building, 190 x 290 ft., at Broadway and Emmet Street, Albany, N. Y., to cost about \$250,000 with equipment. Faile & Seelye, 101 Park Avenue, New York, are architects.



The Noma Electric Co., 487 Broadway, New York, has leased space in the building at 340-44 Hudson Street for a new plant.

The Tide Water Associated Oil Co., 11 Broadway, New York, has concluded negotiations for the purchase of the properties of the McKittrick Oil Co., McKittrick Field, Cal., comprising about 144 acres with present annual output of 200,000 bbl. The new owner plans extensive operations in this section, with expansion in equipment and facilities for increased production.

The Vacuum Oil Co., 61 Broadway, New York, has awarded a general contract to the White Construction Co., 1015 Chestnut Street, Philadelphia, for extensions in its oil refinery at Paulsboro, N. J., consisting of a one and two-story compounding works and tankage building, to cost \$35,000.

The Harrison Bolt & Nut Co., Second and Middlesex Streets, Harrison, N. J., has acquired adjoining property, 100 x 100 ft., for an addition, for which plans will be prepared in the near future. J. Lynus Keating is president.

The New Jersey Power & Light Co., Dover, N. J., will issue bonds for \$950,000, a portion of the fund to be used for extensions and improvements.

The Manhattan Rubber Mfg. Co., 61 Willett Street, Passaic, N. J., has taken out a permit for a two-story addition to its plant, estimated to cost \$50,000.

The City Council, Bayonne, N. J., will ask bids in August for the construction of a one and two-story municipal automobile service, repair and garage building, 100 x 150 ft., to cost about \$50,000 with equipment. Harry Adelman, 494 Broadway, is architect.

The General Lead Batteries Co., 4 Lister Avenue, Newark, has plans for a one-story addition to cost about \$75,000 with equipment. Work will begin at once.

Simon Miller & Co., 33 East Kinney Street, Newark, manufacturing jewelers, have purchased property at 9-13 Emmet Street as a site for a new four-story factory. William E. Lehman, 972 Broad Street, is architect. Simon Miller is head.

Louis R. Freund, receiver for the American & Superior Auto Radiator Works, Inc., 64 William Street, Newark, will dispose of the machinery and other assets of the company at a public sale on July 30.

The Metropolitan Steel Casting Co., Bergen and Third Streets, Harrison, N. J., has been incorporated with capital stock of \$100,000 to manufacture crucible steel castings weighing from ¼ to 350 lb. A plant is being built and will be in operation in about five or six weeks. John A. Williams is president and Joseph A. Tedesco, secretary and treasurer.

The M. S. P. Corporation, 251 New Jersey Railroad Avenue, Newark, N. J., has been incorporated and will design and have manufactured on contract light special machinery, tools and special products in metal. It will shortly be in the market for both materials and equipment on a small scale and is interested in receiving catalogs.

The Horton Radio Corporation, whose temporary address is in care of David J. Moscovitz, 291 Broadway, New York, has been organized to manufacture and grant licenses for the manufacture of radio devices, particularly condensers, coils and other tuning elements. The company controls a series of patent applications and patents in this field and will for the present develop its license system and manufacture only under contract.

The Circle Pleating Outfit Co., 100 West Thirty-first Street, New York, manufacturer of pleating machinery, has been incorporated and has changed its name to the Circle Pleating Machinery Corporation.

## Buffalo

BUFFALO, July 26.

**P**LANs have been filed by the American Radiator Co., 1807 Elmwood Avenue, Buffalo, for an addition to its Elmwood Avenue works, in connection with general expansion and improvement program now under way.

The Lockport Light, Heat & Power Co., Lockport, N. Y., has acquired a four-story building and will remodel for an addition to its power plant.

The Board of Education, Genesee Building, Buffalo, has awarded a contract to George Schaaf, 258 Kingsley Street, for the construction of its proposed two-story Peckham vocational school, 300x300 ft., to cost \$500,000 with equipment.

The Brockway Motor Truck Corporation, Cortland, N. Y., is arranging an expansion and improvement program for considerable increase in output.

The Atlas Steel Co., 1963 Elmwood Avenue, Buffalo, has taken out a permit for rebuilding one of its shop units recently destroyed by fire, to cost about \$17,000.

The A. & J. Mfg. Co., 340 Water Street, Binghamton, N. Y., manufacturer of hardware, has awarded a general contract to H. D. Busfield, 73 Mason Avenue, for a two-story addition, 100x120 ft., to cost about 50,000 with equipment. The Bowie-Clark Co., Press Building, is architect.

The Union Carbide Co., Union Street, Niagara Falls, N. Y., has plans for a one and two-story machine shop addition, 20x35 ft., to cost approximately \$35,000 with equipment.

Bobacket & Brew, 217 East Avenue, Rochester, N. Y., architects, will soon ask bids on general contract for a two-story automobile service, repair and garage building, 82x185 ft., at Batavia, N. Y., to cost close to \$50,000 with equipment.

Conveying machinery, hosting equipment, factory trucks, etc., will be installed in the proposed freight terminal building to be erected at Olean, N. Y., by the Pennsylvania Railroad, to cost in excess of \$75,000 with equipment.

The Board of Education, Hoosick Falls, N. Y., contemplates the installation of manual training equipment in its proposed three-story high school to cost \$200,000 with machinery. Fuller & Robinson, 95 State Street, Albany, are architects.

The Endicott Forging & Mfg. Co., Inc., Endicott, N. Y., has let contract for an addition to its forge shop, 60x120 ft., and an addition to its cold trimming department, 25 x 100 ft. It has recently placed an order with the Chambersburg Engineering Co. for one 4000-lb. board hammer and one 5000-lb. steam hammer.

The plant of the Hunter Fan & Motor Co., Fulton, N. Y., was damaged by fire July 21 with an estimated loss of between \$95,000 and \$150,000. Of this amount \$65,000 was in fans ready for shipment.

The report of the bondholders' committee of the Coplan Steel Co., Ogdensburg, N. Y., was adopted at a meeting held in that city July 20. It was stated that New England banking interests were willing to loan \$100,000 to the company and this plan now awaits the approval of the stockholders, after which the company will be reorganized and operations resumed. The plant was closed last fall when the company lacked sufficient capital with which to fill orders.

The Hunter Arms Co., Fulton, N. Y., maker of the Hunter gun, suffered a loss of \$50,000 by fire July 21.

## Chicago

CHICAGO, July 26.

**J**ULY sales of machine tools compare very favorably with those of June, and have been larger than for the corresponding periods in July for several years back. Inquiry is good, and it is particularly noticeable that purchasers of individual tools show no hesitancy in placing orders promptly. The Burlington list is active and dealers expect some purchases against it this week. Several items on the Santa Fe list are being referred back to Topeka, but it is the general impression that orders will be placed next week. The tabulation of bids on the Chicago & North Western list is reported completed. The Missouri Pacific is asking for prices on a grinder with six cup-type brushes, and the Chicago & North Western is interested in a pattern maker's turning lathe, complete with 440-volt 3-phase 60-cycle motor. The Illinois Central has purchased a double-head motor-driven centering machine and will take bids on a 6-in. centering machine. The Burlington has placed a 36-in. shaper and a 36-in. planer for use in a round-house.

The Chicago Board of Education will receive bids on 500 lathe tools to be dressed, and the McClintic-Marshall Co. is inquiring for a 60-in. x 60-in. x 12-ft. planer for its Morava plant. This company has already placed a sizable list of shearing and punching machinery and still has in the neighborhood of \$50,000 worth of machine tools to buy. Dealers understand that the Mississippi Valley Structural Steel Co. is preparing a list for its new fabricating shops to be erected at Melrose Park, Ill.

Used tools auctioned at the plant of the Apperson Brothers Automobile Co., Kokomo, Ind., brought good prices. Buyers were largely users, and Chicago dealers did not participate actively in the bidding.

The Star Paper Box Factory Co., 1734 West Austin Avenue, Chicago, will build a three-story brick factory, 72 x 109-ft. to cost \$20,000. M. L. Bein, 64 West Randolph Street, is the architect.

## The Crane Market

A FEW small inquiries for overhead cranes have appeared recently and there are a number of locomotive crane inquiries that are active. Among pending overhead cranes is a 30-ton, 65-ft. 10-in. span for the Worthington Pump & Machinery Corporation, Buffalo plant, and a 5-ton, 33-ft. 5-in. span, 3-motor overhead crane for the Edison Electric Illuminating Co., Boston. Thomas E. Murray, New York, is accepting bids on a 3-cu. yd. bucket crane for handling ashes at the plant of the New York Steam Corporation. Stone & Webster, Inc., are inquiring for three 5-ton, 23-ft. 11½-in. span, 7-motor overhead cranes, each with three trolleys operating three hooks, for handling sugar bags at the plant of the American Sugar Refining Co., Brooklyn, N. Y. In the field of locomotive cranes, the New York Central & Hudson River Railroad, which recently closed on a standard 20-ton locomotive crane, is inquiring for a 10-ton, tapered end, gasoline driven locomotive crane.

In the Pittsburgh district the Carnegie Steel Co. is in the market for a 25-ton, 56-ft. span mill type crane for its Clairton, Pa., works.

Among recent purchases are:

General Electric Co., Schenectady, N. Y., six 5-ton and three 3-ton electric overhead cranes for West Philadelphia, from the Northern Engineering Works.

International Paper Co., 100 East Forty-second Street, New York, a 40-ton, electric crane for Canada, from the Northern Crane Works, Ltd.

New York Central & Hudson River Railroad, a 20-ton locomotive crane from the Browning Crane Co.

Chicago & North Western Railroad, Chicago, a 30-ton locomotive crane from the American Hoist & Derrick Co.

Colorado & Southern Railway Co., Denver, Colo., a ¼-cu.

yd. steam shovel with crawl-treads, from the American Hoist & Derrick Co.

Maine Central Railroad Co., Portland, Me., a transfer table from the Whiting Corporation.

Gar Construction Co., Jersey City, N. J., a 10-ton crawl-tread locomotive crane from the Northwest Engineering Co.

Israel Brothers, Dayton, Ohio, a 20-ton used Industrial locomotive crane from an unnamed seller.

Lockwood, Greene & Co., New York, a 4-ton, 22-ft. 7¾-in. span hand power crane for the Liggett & Myers Tobacco Co., Durham, N. C., from Alfred Box & Co.

Troy Belting & Supply Co., Troy, N. Y., two 3-ton, 30-ft. span single I-beam cranes equipped with 2½-ton electric hoists and a separate 2½-ton electric hoist for a slate quarry, from the Chisholm-Moore Mfg. Co.

Thornton Brothers, St. Paul, Minn., a ¼-cu. yd. gasoline driven shovel with crawl-treads from the American Hoist & Derrick Co.

Ellyria Iron & Steel Co., Cleveland, a 5-ton, 3-motor single trolley overhead crane from the Shaw Electric Crane Co.

American Seating Co., Grand Rapids, Mich., a 3-ton monorail electric hoist from the Shepard Electric Crane & Hoist Co.

Reliance Steel Casting Co., Pittsburgh, a 10-ton electric overhead crane from Alfred Box & Co.

Tarentum, Pa., a 10-ton overhead electric crane for the municipal waterworks from Alfred Box & Co.

Carnegie Steel Co., Pittsburgh, two 80-ton, 64-ft. span, double trolley ladle cranes for Homestead, Pa., from the Alliance Machine Co.

The Chicago, Milwaukee & St. Paul will make an expenditure of \$63,000 for changing over the steam power plant at Deer Lodge, Mont., to electric power.

Charles S. Harris, 912 Custer Avenue, Evanston, Ill., will erect a pulley manufacturing plant, 44 x 55-ft.

The Chicago Solder Co., 4201 Wrightwood Avenue, Chicago, is having plans prepared by Schmidt, Gardner & Erickson, 104 South Michigan Avenue, architects, for a two-story addition.

The Dubuque Boat & Boiler Co., Dubuque, Iowa, which has been operated for some time as a partnership, has been incorporated. Its production consists mainly of steel boats, barges, dredges, boilers and structural steel work. I. N. Davenport is secretary and general manager.

The Safety Hook Corporation has been incorporated to manufacture a safety hook designed for use in machine shops. It will also acquire the right to manufacture a patented spiral hook which will be used as a part of an automobile tow line. The company will manufacture its products at Two Harbors, Minn., but within a year will locate its plant in Duluth, Minn. It may be addressed in care of Ryan & Scanlon, Bradley Building, Duluth.

John Deere & Co., Moline, Ill., manufacturers of agricultural equipment, have plans for a new one-story foundry addition, and one-story and basement power house at their East Moline works, to cost about \$150,000 with equipment. O. A. Eckerman is company architect.

The Coyne Trade & Engineering School, 1300 West Harrison Street, Chicago, has plans for a five-story electrical trade school, 110 x 130 ft., at Congress Avenue and Paulina Street, to cost close to \$100,000 with equipment. A. S. Alschuld, 28 East Jackson Boulevard, is architect. Bennett W. Cook is president and treasurer.

The Overhead Door Co., 8066 South Chicago Avenue, Chicago, has awarded a general contract to Van Etten Brothers, Inc., 11016 Michigan Avenue, for a new two-story plant, 50 x 132 ft., to cost about \$25,000. Doerr, Lundquist & Doerr, 7 West Madison Street, are architects.

The Central Illinois Public Service Co., Springfield, Ill., has concluded negotiations for the purchase of three municipal electric power plants at Kimmunity, Middletown and Creal Springs, and for six privately owned power stations at Littleton, Farina, Mendon, Paloma, New Liberty, and Coatsburg. Extensions and improvements are contemplated.

The National Refining Co., Aberdeen, S. D., is considering rebuilding the portion of its oil refinery recently destroyed by fire, with loss reported at \$20,000 including equipment.

The International Harvester Co., 606 South Michigan Avenue, Chicago, has awarded a general contract to the

J. & W. A. Elliott Co., Lumber Exchange, Minneapolis, Minn., for a five-story and basement factory branch and distributing plant, 88 x 150 ft., at Des Moines, Iowa, to cost about \$175,000. W. T. Price is company architect.

The Niemann Table Co., Seventy-seventh Street and Cottage Grove Avenue, has asked bids on a general contract for its proposed one and two-story addition, with one-story steam power plant, estimated to cost \$100,000. The Session Engineering Co., 208 South La Salle Street, is architect and engineer. F. W. Niemann is president.

The Chicago, St. Paul, Minneapolis & Omaha Railway Co., 226 West Jackson Boulevard, Chicago, has awarded a general contract to T. & L. D. Libby, Temple Court, Minneapolis, Minn., for an addition to its engine house and shops at St. James, Minn., including a 100-ft. electric-operated turntable, estimated to cost \$50,000.

The Burton Auto Spring Mfg. Co., 2433 West Forty-eighth Street, Chicago, has awarded a general contract without competition to J. L. Tupy, 6307 West Twenty-second Street, Berwyn, Ill., for a one-story and basement addition, 55 x 120 ft., to cost \$45,000.

The Maintenance Equipment Co., Railway Exchange, Chicago, has been appointed exclusive sales agents in the United States for the sale of the Mack reversible switch point protector. Manufacture of this device will be handled by the Fleming Co., Scranton, successor to J. R. Fleming & Son.

## Pittsburgh

PITTSBURGH, July 26.

FEW new inquiries are coming out for machine tools in this market, but sales against business which has been pending are fairly numerous. The trade in general regards the situation as about all that could be expected for this time of the year.

Contract has been let by the United States Cast Iron Pipe & Foundry Co., East Burlington, N. J., to the H. K. Ferguson Co., for a one-story addition to its foundry at Scottdale, Pa., 60 x 170 ft., to cost \$50,000 with equipment.

The Viking Oil Co., Warren, Pa., is planning for early operations at the plant of the Lyons Refining Co., Clarendon, Pa., recently acquired. Extensions and improvements are planned, including additional equipment installation.

The National Lead & Oil Works, New Kensington, Pa., has plans for an addition to cost about \$175,000, including equipment. An oxide department will be equipped for the production of litharge and red lead for commercial purposes. A system for the recovery of dust fumes will be installed.



The Westinghouse High Voltage Insulator Co., Derry, Pa., has awarded a general contract to Cartensen & McLain, Swank Building, Johnstown, Pa., for a one-story addition, 96 x 100 ft., with extension, 25 x 40 ft.

Fire, July 19, destroyed a portion of the oil refinery of the Warren Refining Co., Venturatown, near Warren, Pa., with loss in excess of \$500,000 including machinery. The loss included tankage department, pumping station, boiler plant, filter house, by-products wax plant and other divisions. The company is headed by Marcus W. Jamieson, Warren. Tentative plans are under advisement for rebuilding.

The West Penn Power Co., West Penn Building, Pittsburgh, has arranged for a bond issue of \$18,500,000, a portion of the proceeds to be used for extensions and improvements in power plants and system. A. M. Lynn is president.

The Wheeling Public Service Co., Wheeling, W. Va., will make extensions and improvements in its ice-manufacturing plant at Davis Alley and Patterson Street, to cost \$20,000.

The Redstone Coal & Coke Co., Weirton, W. Va., is planning for the construction of a new coal-loading dock, with mechanical loading, conveying and other handling machinery. A site has been secured near Palmer on the Monongahela River.

The Keystone Baking Co., West Bridgewater, Pa., plans the installation of ovens, power equipment, conveying and other machinery in a one-story addition, 50 x 130 ft. The McCormick Co., 121 South Negley Avenue, Pittsburgh, is architect and engineer.

The Huntington Motor & Truck Co., 121 Third Avenue, Huntington, W. Va., has filed plans for a two-story addition, to cost close to \$25,000 with equipment. T. J. Shipley heads the company.

The Columbia Gas & Electric Corporation, Charleston, W. Va., is being organized with a capital of 3,000,000 shares of stock, no par value, to take over and consolidate the Columbia Gas & Electric Corporation and the Ohio Fuel Corporation. Plans are under way for expansion. George Crawford, heretofore president Ohio Fuel Corporation, will be chairman of the board of the consolidated company; Philip G. Gossler, president of the Columbia company, will act in like capacity for the merged organization.

The Maxee Co., 223 Fourth Avenue, Pittsburgh, has been incorporated and will have manufactured on contract the Maxee cutting device, which is for use in the cutting of steel with fuel gas and oxygen. The company does not contemplate the erection of a plant at present. J. Donald McCutcheon is general manager.

## Cincinnati

CINCINNATI, July 26.

**T**HE majority of local machine tool builders report a sharp decline in sales the past week. However, several manufacturers state that business this month will equal that in June and orders on hand are sufficient to insure satisfactory plant operations in the next six weeks. Considerable pending business is expected to be closed in the near future. The largest order of the week called for 25 special lathes for a company in the automotive industry.

The Nordyke & Marmon Co., Indianapolis, has issued a list of 104 machine tools, as follows, for the manufacture of light eight-cylinder automobiles. Bids should be forwarded to A. B. Wagner, of the Nordyke & Marmon Co. Used as well as new machinery will be considered.

*The following machines to be equipped with 220-volt, 3-phase, 60-cycle motors:*

- One 30 x 24-in. x 20 or 22-ft. Ingersoll miller.
- Two model B type No. 16 Natco or equivalent multiple-spindle drill presses.
- One 18 x 28-in. Natco or equivalent multiple-spindle drill press.
- One model B No. 14, 18 x 32-in. Natco or equivalent multiple-spindle drill press.
- One type 14, 16 x 24-in. Natco multiple-spindle drill press.
- One model B type 16, 18 x 48-in. Natco or equivalent multiple-spindle drill press.
- One model B type 16, 32 x 28-in. Natco multiple-spindle drill press.
- One No. 4 plain mill or 48-in. duplex mill.
- One No. 2 vertical miller.
- One No. 2-A or 2-B Milwaukee or equivalent miller.
- One 1½-in. 2 BS Milwaukee or equivalent horizontal miller.
- One 3-B Milwaukee horizontal miller or Newton or Ingersoll straddle mills.

One 3-in. spindle Binnse or Lucas type horizontal boring mill for boring 12.5 in. holes in fly wheels.

One 5-B Moline or equivalent cylinder boring machine.

Four Foote-Burt or Leland & Gifford reaming machines or No. 321 Baker drills.

One model B type 16 Natco or equivalent multiple-spindle drill press.

One Bullard Continumatic or Gisholt Simplimatic for fly wheels.

One 600 to 1000-ton coining press.

One No. 2-B Milwaukee horizontal miller or one 24-in. Cincinnati duplex miller or equivalent.

One 24-in. Cincinnati or equivalent duplex miller.

One 16 x 24-in. No. 14 Natco or equivalent multiple-spindle drill press.

Two No. 24 or No. 34 New Britain 5-spindle chucking machines.

One model B type 14 Natco or equivalent multiple-spindle drill press.

*The following machines to be equipped for belt drive:*

One 2-B Milwaukee or equivalent horizontal miller.

One 1½-in. 2-BS Milwaukee or equivalent horizontal miller.

One No. 1-A Milwaukee or equivalent horizontal miller.

One 3-B Milwaukee or equivalent miller with rotary table.

One 2-B Milwaukee or equivalent miller.

One No. 1 Avey or equivalent pedestal-type drill.

Four No. 2 pedestal-type drills.

One No. 2 Avey or equivalent sensitive drilling machine.

Three No. 2 Avey or equivalent drill presses, pedestal type.

One No. 2 Avey or equivalent pedestal type drill press, with automatic feed.

One No. 1 Avey or equivalent drill press.

Two No. 1 Avey or equivalent sensitive drill presses.

One 1½-in. Avey or equivalent pedestal-type drill press.

One No. 2 Avey or equivalent two-spindle drill press.

One No. 2 Avey drill press.

Six 24-in. Cincinnati or equivalent drill presses.

Two 21-in. Cincinnati or equivalent drill presses with tapping attachments.

Nine 21-in. Cincinnati or equivalent sliding-head drill presses.

One 24-in. Cincinnati or equivalent sliding-head drill press or S-S Garvin horizontal drill.

Four 21-in. Cincinnati or equivalent sliding-head drill presses with tapping attachments.

Five 24-in. Cincinnati or equivalent sliding-head drill presses.

One 21-in. single-spindle Cincinnati or equivalent sliding-head drill press.

One 21-in. Cincinnati or equivalent drill press.

Six No. 6 Whitney hand millers.

Two 36-in. radial drills with tapping attachments.

One 36-in. radial drill press with tapping attachment.

One 36-in. sensitive radial drill with tapping attachment.

One 36-in. sensitive radial drill.

One 36-in. high-speed sensitive radial drill.

Four 24-in. x 11-ft. cone type engine lathes.

One three-spindle No. 1 Avey or equivalent drill press, pedestal type or two single-spindle No. 1 Avey or equivalent drill presses.

Two 24-in. x 8-ft. or 10-ft. double back-geared engine lathes or one 24-in. rapid-production vertical turret lathe.

One 5-A Potter & Johnson automatic screw machine.

One hole-hog rail drill No. 66-D Moline or equivalent with 16 spindles.

*Bids are asked also on the following machines:*

One 16 x 3-in. No. 16 Natco or equivalent multiple spindle drill press.

One No. 4 Warner & Swasey geared friction head turret lathe.

One 40-in. Oesterlein or equivalent miller.

One hydraulic broaching machine for 1-in. broach.

One 4-in. spindle light type gang drill press.

Railroads have been active purchasers of small lots of tools. The New York, New Haven & Hartford bought a 38-in. x 8-ft. planer and a 40-in. x 16-ft. lathe. The Illinois Central closed for two combination journal turning and axle lathes and is expected to purchase more equipment the coming week. The Michigan Central took a single lathe, while the Louisville & Nashville contracted for a 20-in. lathe. The Reading Railroad bought a 90-in. locomotive journal turning lathe and a 48-in. carwheel borer. A local builder received orders for a lathe to be shipped to France.

and for another machine for delivery to Java. The Cord-Wright Machinery & Supply Co., St. Louis, took a 1500-lb. single frame steam hammer. The Western Dri-Kure Mfg. Co., Los Angeles, purchased a 73-in. boring mill.

The United States Furnace Fitting Mfg. Co., Cincinnati, has established new works at 32 East Front Street and plans extensive production.

The Delco-Light Co., Third National Bank Building, Dayton, Ohio, has awarded a general contract to C. H. Shook, same address, for the first unit of its plant extension at Moraine City, Dayton, for the manufacture of electric refrigerating apparatus, to be one story, 300 x 2600 ft.

The Musgrave Pencil Co., Inc., Shelbyville, Tenn., is in the market for special machinery for pencil manufacture.

The National Garages, Inc., Nashville, Tenn., is said to have preliminary plans for a proposed service, repair and garage building, to cost close to \$450,000 with equipment.

The Crane Enamelware Co., Chattanooga, Tenn., will defer any proposed addition to its plant as recently reported, and no extensions will be made at the present time. W. H. Powell is general manager.

The Board of Education, Van Buren Township, Belmont, Ohio, contemplates the installation of manual training equipment in its proposed three-story centralized high and grade school, estimated to cost \$325,000. Walker & Norwich, American Building, Dayton, Ohio, are architects.

E. W. Cooper, 510 Deaderick Street, Nashville, Tenn., engineer, has inquiries out for a centrifugal pumping unit with capacity of 700 gal. per min.

The Johnson Spring Co., Morristown, Tenn., has leased a building, totaling about 10,000 sq. ft. of floor space, for a new plant for the manufacture of wire springs.

The Board of Education, Cincinnati, is considering the installation of manual training equipment in its proposed Western Hills high school at Ferguson Road and Bridgetown Pike, estimated to cost \$875,000, for which superstructure will soon begin. Garber & Woodward, Leverone Building, are architects.

The L. J. Breed Equipment Co., Chattanooga, Tenn., machinery dealer, has inquiries out for a portable air compressor, with capacity of 100 ft. per min.

The City Council, Lewisport, Ky., will rebuild the municipal pumping plant recently destroyed by fire. New equipment will be installed.

The Typographic Machines Co., Dayton, Ohio, has been organized to manufacture two new devices for process letter work. The work of tooling and completing production models is now under way in an experimental shop and there will be no machinery or plant requirements for about six months. At that time it expects to be ready for an expansion of its program. F. H. Poeppelmeier is president; J. L. Weigand, vice-president and general manager, and V. E. Poeppelmeier, secretary and treasurer. The company's laboratory is at 429 East Third Street, Dayton.

## Gulf States

BIRMINGHAM, July 26.

**F**IRE, July 23, destroyed a portion of the plant of the Crane Ready Cut House Co., Houston, Tex., manufacturer of portable houses, etc., with loss reported in excess of \$200,000 including equipment. It is planned to rebuild.

The United States Engineer, Galveston, Tex., is asking bids until Aug. 2 for 400 seamless steel boiler tubes, circular 9; also five kedge anchors, 800 lb. each, circular 8; and one cast steel propeller, circular 7.

The City Council, Senatobia, Miss., has preliminary plans for extensions in the municipal electric light and water plants, including the installation of additional equipment. A fund is being arranged.

The DeLand Gas Co., DeLand, Fla., recently acquired by new interests headed by A. H. Muller, room 1530, 30 Broad Street, New York, and associates, has plans for extensions and the installation of water gas generators, boiler apparatus, purifying equipment, etc. It is also proposed to establish an artificial gas plant at Winter Haven, Bartow, and vicinity where franchises have been secured. W. H. Fritchman is constructing engineer, in charge.

The Woodstock Slag Corporation, Southern Railway Building, Birmingham, has inquiries out for a No. 8 rotary crusher.

The Willetts Wood Products Co., Willetts, La., has tentative plans for the construction of two new mill units for the production of finished hardwood flooring, to cost close to \$50,000 with machinery.

The Board of Trustees, College of Industrial Arts, Denton, Tex., has tentative plans for extensions and improve-

ments in the steam power plant to cost \$45,000 with equipment. L. H. Hubbard is president.

The Dade County Lumber Co., Tampa, Fla., has plans under advisement for a new storage and distributing plant at Palm Beach Heights, with equipment for handling, conveying, etc. The project will cost about \$150,000.

The Common Council, Corpus Christi, Tex., plans the installation of pumping equipment in connection with proposed extensions and improvements in the municipal waterworks. A bond issue of \$60,000, is being arranged. H. Levinson is city engineer.

The Polar Ice Co., Columbus, Miss., will rebuild the portion of its ice-manufacturing plant recently destroyed by fire, with loss in excess of \$75,000.

Lang & Witcheil, American Exchange Bank Building, Dallas, Tex., architects, have plans for a three-story automobile service, repair and garage building, 80 x 135 ft., to cost about \$65,000. It will be occupied under lease by the Studebaker Corporation of America as a factory branch and service works. P. A. Rumpf, 2401 South Harwood Street, is district manager.

The Board of Works, Houston, Tex., plans the construction of a two-story pumping plant for the municipal waterworks. W. A. Dowdy, 402 Euclid Avenue, is architect.

The City Council, St. Petersburg, Fla., has filed plans for the construction of new repair shops at the municipal gas works, to cost approximately \$75,000 with equipment.

J. B. Joseph, Houston, Tex., has taken out a permit for the immediate construction of a one-story ice-manufacturing plant to cost about \$21,000.

The Board of Education, Elgin, Tex., plans the installation of manual training equipment in its proposed new three-story high school to cost about \$100,000, for which plans will soon be completed by Page Brothers, Austin National Bank Building, Austin, architects.

The City Council, Ruston, La., is completing plans for a bond issue of \$100,000, the fund to be used for extensions and improvements in the municipal electric power plant and waterworks.

The Marland Pipe Line Co., Ponca City, Okla., is said to be planning for extensions and improvements in its properties, including the construction of a 40-mile pipe line in the vicinity of Odessa, Tex. A large tank farm, storage and distributing plant will be located at Kemper, Tex. The entire project is reported to cost in excess of \$400,000.

The Fritz Motor Co., Eighth and Austin Streets, Wichita Falls, Tex., has plans for a two-story service, repair and garage building, 90 x 100 ft., to cost \$80,000 with equipment. Pate & Thompson, City National Bank Building, are architects.

The Kansas City Power & Light Co., Kansas City, Mo., will construct a \$1,250,000 power plant about 60 miles north of Amarillo, Tex.

The Guardian Fire Alarm Co., Slaughter Building, Dallas, Tex., has been incorporated to manufacture a fire alarm system. It will buy gongs, wire, transformers, d.c. batteries, fuse blocks and metal boxes and other material. J. P. Kelly is manager.

## New England

BOSTON, July 26.

**W**ITH plants forced to close because of hot weather and with summer curtailment in operating schedules, machine tool sales the past week were few and consisted mostly of used equipment. The most important transaction was the sale of a used power hammer to a Seattle shop, shipment to be made via the Panama Canal. A pronounced falling off in new inquiries is also reported.

Shops in and about Boston appear more active than at other New England points, Connecticut excepted. In the Springfield district, drop forging plants are operating two shifts five days a week, as against three shifts heretofore, indicating some let-down in the manufacture of automobile parts. The Deane Pump Works, Holyoke, Mass., a division of the Worthington Pump & Machinery Corporation, has taken on a few additional machinists, but New England shops in general do not require more help. The local machine tool trade does not anticipate much interest in buying before September.

The city of Boston opened bids July 26 on a small amount of equipment for an East Boston school. Weston & Sampson, 14 Beacon Street, Boston, engineers, are taking bids on sewage pumps, motors and miscellaneous equipment for the town of Wakefield, Mass.

The demand for small tools has dropped again, buying earlier in July proving to be but temporary.



The New York, New Haven & Hartford Railroad will receive bids until Aug. 2 for the construction of a roundhouse at Greenbush, Scituate, Mass., and for the erection of a roundhouse and other buildings at Fall River, Mass., including a machine shop.

The main plant and other buildings of N. Pelaggi & Co., Northfield, Vt., granite working, were recently destroyed by fire at an estimated loss of \$200,000. It is planned to rebuild soon. New lifting equipment will be required.

The George P. Carver Co., 261 Franklin Street, Boston, engineer and contractor, has completed plans for a one-story, 34 x 55 ft. briquette manufacturing plant on Phillips Wharf, Salem, Mass., for the Salem Briquette Co.

Fire, July 23, destroyed the two-story, 100 x 150 ft. machine shop and four-story pattern shop of the Atlantic Works, East Boston, shipbuilding, with an estimated loss of \$150,000. J. Bertlesen is president of the company and George Webster superintendent.

Morris Yoffe has purchased several buildings and approximately 30,000 ft. of land, with a Boston & Maine Railroad spur track on School Street, at Watertown, Mass., for a structural steel business.

The business, patents, stock and machinery of the Harrington Knife Co., Worcester Street, Southbridge, Mass., have been sold to the Hyde Mfg. Co., Eastford Road, Southbridge. The new owner will continue the manufacture of products made by the Harrington company.

The Board of Trustees, University of Maine, Orono, has plans for a new two-story mechanical engineering building, to cost approximately \$150,000 with equipment.

Thomas G. Sadler has acquired the interest of his brother, Herbert A., in the Sadler Brothers Co., South Attleboro, Mass., manufacturing jeweler, and will operate the plant in the future as a private enterprise. Extensions are said to be under advisement.

Dunn, Richards & Tuller, Inc., Springfield, Mass., recently organized to operate cold storage and refrigerating plants, has taken over the buildings at Hillman and Dwight Streets, and will operate at this location. Additional equipment will be installed for both dry and cold storage facilities. The new company is capitalized at \$100,000 and is said to be contemplating the establishment of other plants. It is headed by Charles M. Dunn, Louis H. Richards and Raymond M. Tuller.

The Edison Electric Illuminating Co., 39 Boylston Street, Boston, has asked bids on a general contract for its proposed equipment storage building at Framingham, Mass., with automobile service, repair and garage division for company motor trucks and cars. The structure is reported to cost about \$75,000. Bigelow & Wadsworth, 3 Hamilton Place, Boston, are architects.

The Firestone Tire & Rubber Co., Akron, Ohio, is said to have plans for a new factory branch and distributing plant at Fall River, Mass., to cost in excess of \$100,000 with equipment.

The Aroostook Federation of Farmers, Caribou, Me., will erect a one-story addition to its fertilizer plant and install additional equipment. The expansion will cost approximately \$25,000.

Fire, July 20, destroyed a portion of the plant of the Island Box Co., Bradford district, Haverhill, Mass., manufacturer of paper boxes and containers, with loss reported at \$35,000 including equipment. It is planned to rebuild.

Edward L. Sturtevant, Boston, represented by Clarence A. Barnes, 45 Devonshire Street, attorney, contemplates the erection of a four-story automobile service, repair and garage building at 10 Gainsborough Street, to cost about \$700,000 with equipment.

The Tidewater Paper Co., Thamesville, Conn., recently formed to take over the plant and business of the Uncas Paper Co., has resumed production after a shut-down of about 6 months. It has filed notice of intention of increasing its capital stock by \$500,000, a portion of the proceeds to be used for expansion.

## Milwaukee

MILWAUKEE, July 26.

**N**EW business continues to be booked by local machine tool builders in a way that indicates a maintenance of present production schedules for some time. Milling machine makers have some railroad orders on their books which, added to the requirements of a number of the principal automobile factories, make a sizable volume. Inquiry is fairly active and the trade looks for some good orders during August.

The Moe-Bridges Co., 242 Broadway, Milwaukee, manufacturer of lighting fixtures and equipment, has increased

its capital stock from \$750,000 to \$1,000,000 and is taking more space which will require additional equipment. The company was organized in 1919 and now maintains nine distributing branches throughout the United States. Henrik Moe is president and general manager.

The Federal Rubber Co., Cudahy, Wis., division of the Fisk Rubber Co., Chicopee Falls, Mass., has awarded contracts for the construction of a six-story extension to the main factory, 66 x 286 ft., to cost about \$300,000 with equipment now being purchased. G. P. Allen, 250 West Fifty-seventh Street, New York, is chief engineer.

The Central Wisconsin Storage Co., Marshfield, Wis., will build a \$75,000 cold-storage warehouse and plant, and has let the contract for the building, 80 x 110 ft., three stories and basement, to F. A. Felhoefer & Co., Marshfield. Peter Ebbe is chairman of the building committee.

The Board of Education, LaCrosse, Wis., closes bids July 29 for an addition to and alterations in the manual-training department of the Central High School building at Sixteenth and Cass Streets. Plans are by Merman & Skogstad, local architects. B. E. McCormick is secretary of the board.

The Board of Education, Marion, Wis., will take bids until Aug. 5 for the construction of a new high and grade school with vocational training department, designed by Smith & Brandt, architects, Manitowoc and Appleton, Wis., and estimated to cost \$200,000. G. W. Durkop is secretary of the board.

The Central Wisconsin Power Co., Wausau, Wis., has let the general contract to the L. E. Myers Co., Chicago, for the construction and equipment of a 5000-hp. hydroelectric generating plant on the Wolf River four miles north of Shawano, Wis. Plans are by Mead & Seastone, hydraulic engineers, Madison, Wis. W. S. Wing is general superintendent of construction.

The Loeffelholz Co., 170 Clinton Street, Milwaukee, brass founder, is transferring part of its operation to the first unit of its new plant, 50 x 140 ft., and equipped with two electric cranes, a coke-fired melting furnace and 20 molding machines. Work will start immediately on the second of three units which will entirely replace the present works. About \$250,000 will be invested. The company is now specializing in brass and bronze antique hardware, fixtures, etc., although continuing its original department of railroad castings and supplies. George B. Miller is general manager.

The Milwaukee branch of the Columbia Tool Steel Co., Chicago Heights, Ill., has moved from 137 Sycamore Street to increased space at 109-111 Reed Street, where larger stocks will be carried, in addition to the installation of new equipment.

## Philadelphia

PHILADELPHIA, July 26.

**B**IDS will be received by the Board of Education, Key-Bone Building, Philadelphia, until Aug. 3 for a quantity of steel lockers and steel shelving. William Dick is secretary and business manager.

Fire, July 22, destroyed a portion of the plant of the Chambers Brothers Co., Fifty-second and Media Streets, Philadelphia, manufacturer of brick-making machinery and parts, with loss reported at \$25,000. It is planned to rebuild.

The Bureau of Water, Department of Public Works, City Hall, Philadelphia, Walter R. Rodgers, Jr., acting director, is asking bids until Aug. 3 for one electrically-operated pumping unit and auxiliary machinery for the Torresdale pumping station, contract No. 835, and switchboards and electrical equipment for the same station, contract No. 829.

The Pennsylvania Railroad, Montgomery Smith, Seventeenth and Filbert Streets, Philadelphia, purchasing agent, is asking bids until Aug. 4 for 10,000 to 12,000 track circuit connections and fittings, contract No. 20-1926.

The Electric Storage Battery Co., Nineteenth and Allegheny Streets, Philadelphia, has awarded a general contract to the William Steele & Sons Co., 219 North Broad Street, for a two-story and basement addition, 170 x 190 ft., to cost in excess of \$175,000 with equipment.

Irwin T. Catharine, Franklin Trust Building, Philadelphia, architect, is revising plans and will soon ask new bids on a general contract for a two-story automobile service, repair and garage building at 924-26 Spring Street, to cost about \$175,000 with equipment.

The Board of Education, Keystone Building, Philadelphia, plans the installation of manual training equipment in a proposed senior high school on site just acquired at Seventy-fourth and Seventy-fifth Streets, to cost in excess of \$500,000. Irwin T. Catharine, Franklin Trust Building, is architect for the board.

The Philadelphia Rapid Transit Co., 310 Dauphin Street, Philadelphia, has applied for permission to issue new preferred stock for \$5,000,000, a considerable portion of the

proceeds to be used for extensions and improvements; also, including a fund of \$800,000, for service, repair and garage buildings for motor buses. The bulk of the work will be carried out during 1927.

The Williamsport-Buick Co., 405 West Third Street, Williamsport, Pa., local representative for the Buick automobile, has awarded a general contract to the H. K. Ferguson Co., for a two-story automobile service, repair and garage building, 115 x 150 ft., to cost \$150,000 with equipment. F. Arthur Rianhard, Masonic Temple Building, is architect.

The Dauphin Consolidated Water Supply Co., Dauphin, Pa., plans the installation of additional pumping machinery in connection with extensions and improvements in its system. The entire project will cost \$250,000.

The Board of Education, Norristown, Pa., is considering the installation of manual training equipment in a proposed new junior high school for which land has just been secured at Logan, Pine, Roberts and Locust Streets. The structure will cost in excess of \$200,000, and is expected to be ready for service during the coming year. H. O. Dietrich is superintendent of schools.

The Sheuer Baking Co., South Scranton, Pa., plans the installation of ovens, power equipment, conveying and other machinery in connection with the rebuilding of its plant destroyed by fire July 19, with loss reported at \$100,000 including equipment.

The Pennsylvania Power & Light Co., Hamilton Street, Allentown, Pa., has called a special meeting for Sept. 3 to approve an increase in capital of \$1,800,000 in preferred stock, and 500,000 shares of common stock, no par value, the fund to be used in part for proposed extensions and improvements, including acquisition of other properties.

The Ajax Metal Co., 46 Richmond Street, Philadelphia, has plans nearing completion for a one-story addition on Dunton Street, reported to cost about \$20,000.

The Shenandoah City & Indian Ridge Collieries, Shenandoah, Pa., will make extensions and improvements in their tipples and other plant equipment. The property has been closed down for several weeks to carry out the work.

The Huff-Daland Co., Bristol, Pa., manufacturer of aircraft, is developing maximum capacity at its local plant and will maintain this schedule indefinitely. The company has received an order from the United States Army for 13 all-metal bombing planes, weighing about 17,000 lb. each, and designed to carry a load of 9000 lb., with approximate speed of 135 miles per hour. Thomas H. Huff is president.

The Board of Education, Hughesville, Pa., is said to be planning the installation of manual training equipment in a proposed two-story high school, estimated to cost close to \$125,000. Lawrie & Green, 116 Locust Street, Harrisburg, Pa., are architects and engineers.

The Lancaster Metalcraft Corporation with a plant at Columbia, Pa., has been organized to manufacture screw caps, metal stampings and specialties. The president of the company is J. A. Scheffer, formerly of the Lancaster Steel Products Corporation. H. L. McClure is secretary and treasurer, and W. L. Bucher, vice-president. The new company is a successor to the Gibbs Metal Container Co. and has a modern and well equipped plant. In addition to novelties and light stampings of various metals, the company will manufacture an automobile curtain roller for closed cars.

The B. & R. Plating & Rustproofing Co., Howard and Norris Streets, Philadelphia, has taken over the plant and all other assets and liabilities of the partnership which was operating as the B. & R. Plating Works. The new company has doubled the floor space and has installed zinc and cadmium alloy tanks and is also operating ball burnishing barrels. The original line of work of the B. & R. Plating Works, which was custom nickel plating, is also being continued.

## Indiana

INDIANAPOLIS, July 26.

**P**LANs are being prepared by the Indian Refining Co., Lawrenceville, Ill., for a one-story and basement machine and repair shop, 50 x 500 ft., at Indianapolis, to cost about \$150,000 including equipment. The installation will provide for two electric traveling cranes. The company is also arranging for the construction of a new storage and distributing plant at this location, one-story and basement, 50 x 125 ft., to cost approximately \$60,000 with equipment. J. H. Graham is president.

The Winchester Gravel Co., Winchester, Ind., recently organized with a capital of \$40,000, plans to operate local sand and gravel properties, and will equip a complete handling plant. Ernest M. and Everett Clark, Winchester, head the company.

The Anderson Aircraft Co., Anderson, Ind., manufac-

turer of airplanes and parts, is considering the removal of its plant to Evansville, Ind., where the capacity will be considerably increased. A site is being selected.

E. F. Miller, Farmers' Trust Building, Anderson, Ind., architect, has completed plans for a three-story and basement automobile service, repair and garage building, 72 x 145 ft., to cost \$35,000 with equipment.

The Graham Glass Co., Evansville, Ind., has plans for a new steam power house to cost about \$100,000 with equipment, on which work will proceed at once. A. E. Cooney is engineer, in charge.

John C. Kreidt & Co., 517 Ewing Street, Fort Wayne, Ind., tinning and roofing products, have plans for a one-story addition, 42 x 60 ft. Additional equipment will be installed. Henry W. Meyer, 615 West Jefferson Street, is architect.

The County Supervisors, Winchester, Ind., have approved an appropriation of \$19,000 for a steam power plant for service at the County buildings. Plans will be prepared at once.

The Serv-el Corporation, 17 East Forty-second street, New York, manufacturer of electric refrigerators and refrigerating equipment, has plans under way for extensions in its plant at Evansville, Ind. Considerable additional machinery will be installed. The entire project is reported to cost close to \$1,000,000. J. J. Brown is vice-president.

The Board of Education, New Albany, Ind., plans the installation of a manual training department in its proposed two-story and basement high school to cost \$325,000. Bids will be asked soon on a general contract. W. C. Findt, Springfield, Ohio, is architect.

The Indiana Gas Utilities Co., Terre Haute, Ind., recently organized to take over properties at Terre Haute, Richmond, Brazil and other points, is disposing of a bond issue of \$2,250,000, a portion of the fund to be used for the consolidation and for proposed extensions, including steam power equipment, high pressure lines, etc. Ralph H. Beaton is vice-president.

The South Bend Engineering & Sales Corporation, Poledor Building, South Bend, Ind., has been incorporated with capital stock of \$25,000 to manufacture a compensator for automobiles. Samples of the product are now being manufactured by the L. V. Davis Engineering Co., South Bend.

## St. Louis

St. LOUIS, July 26.

**B**ONDS for \$200,000 have been voted by citizens at Kirkwood, Mo., for extensions and improvements in the municipal electric light and power plant, and waterworks. The City Council is in charge.

The Moon Motor Co., St. Louis, will arrange for early increase in production for a new model car, designed to retail at \$1,000. Initial production is on a basis of about 80 cars per day.

Fire, July 21, destroyed a portion of the plant of the Conway Compress Co., Conway, Ark., with loss reported in excess of \$200,000 including equipment.

Ovens, power equipment, conveying and other machinery will be installed in the proposed two-story and basement plant, 75 x 130 ft., to be erected by the Hurt Baking Co., Emporia, Kan., to cost \$50,000. C. W. Squires, Exchange Building, Emporia, is architect.

The Arkansas-Missouri Power Co., Blytheville, Ark., has acquired the municipal electric light and power plant at Marston, Mo., and will furnish service here in the future. Extensions are planned.

The Common Council, Fort Scott, Kan., contemplates the installation of pumping machinery in connection with proposed extensions and improvements in the municipal waterworks, estimated to cost \$100,000. An election to approve the bond issue has been called on Aug. 3. S. A. Sulentic, New England Building, Topeka, Kan., is engineer.

The City Council, Batesville, Ark., is planning the early purchase of a 400-hp. Diesel oil engine and accessory equipment, for the municipal electric light plant.

The Magnolia Petroleum Co., Wewoka, Okla., will rebuild the portion of its oil storage and distributing plant recently destroyed by fire, with loss in excess of \$100,000 including equipment and stock.

The Benton County Utilities Co., Gravette, Ark., has leased the local municipal electric lighting plant, and will furnish service here in the future. Extensions will be made, including the construction of a transmission line to Gentry, Ark., about 18 miles.

The Delaware Hardwood Co., Wright Building, Tulsa, Okla., has acquired property at Flint, Okla., and plans the construction of a new mill with steam power house, to cost about \$75,000 with machinery.



The Common Council, McCook, Neb., plans the installation of pumping machinery in connection with a proposed municipal waterworks, for which a bond issue of \$105,000 has been approved. Bruce & Grupe, Bankers' Reserve Life Building, Omaha, Neb., are consulting engineers.

Additional information has been received regarding improvements undertaken by the St. Louis Car Co., 8000 North Broadway, St. Louis. The company will build a one-story addition, 130 x 130 ft., for general shop service and assembling, which will be equipped with four 60-ft. 10-ton cranes, and a steel warehouse, 60 x 100 ft., with an additional 200-ft. crane runway, which will be equipped with a 10-ton crane. Contract for the steel fabricating and erecting was placed with the Mississippi Valley Structural Steel Co., and the concrete work will be done by the Ratermann Building & Construction Co. Sears & Plou will furnish the fenestra metal sash, and the Philip Carey Co. the roofs. All of these contractors have offices in St. Louis.

The Wood & Lane Co., 915 Olive Street, St. Louis, Southwestern sales agent for electrical and radio products, has been changed from a partnership business to a corporation and the name has been changed to Wood & Anderson Co., Inc.

## South Atlantic States

BALTIMORE, July 26.

PLANS are being arranged by the Jones Hollow Ware Co., 1010 Ashland Avenue, Baltimore, manufacturer of plumbing equipment and supplies, enameled iron products, etc., for rebuilding the portion of its five-story plant recently destroyed by fire, with loss of about \$200,000 including equipment. W. B. Meanley is president.

The Griffin Gas, Ice & Cold Storage Co., Griffin, Ga., contemplates extensions and improvements in its plant, to cost about \$40,000 including equipment. The fund will be secured from a bond issue of \$140,000 soon to be sold.

The Southern Mfg. Co., Savannah, Ga., recently formed with a capital of \$200,000 has taken over the former plant of the South Atlantic Casket Co., Montgomery Street, for a new plant. Extensions and improvements are planned in present building. Gordon L. Grover and V. B. Jenkins head the new organization.

The Board of Commissioners, District of Columbia, District Building, Washington, is asking bids until Aug. 10 for a quantity of steel lockers for the local fire department. Bids have also been asked for extensions and improvements in the power plant at the home of the aged and infirm, Blue Plains, D. C.

Levenson & Zenitz, Howard and Ostend Streets, Baltimore, manufacturers of furniture, are having revised plans drawn and will soon ask bids for a two-story addition, 60 x 135 ft., to cost \$75,000. J. R. Freund, 1307 St. Paul Street, is architect.

The Queen City Glass Co., Cumberland, Md., is arranging for a complete new plant on site donated by the Western Maryland Railroad, estimated to cost in excess of \$50,000. The local plant of the company was destroyed recently by fire. Complete new equipment will be installed.

The City Council, Lynchburg, Va., has authorized an appropriation of \$22,000, for electrically operated pumping equipment and standpipe for the municipal waterworks.

S. R. Chavasse, Henderson, N. C., has inquiries out for wood-working machinery for the manufacture of doors, window frames and kindred products.

The Water and Sewer Commission, Salisbury, Md., E. J. C. Parson, treasurer, plans the installation of electrically operated pumping machinery in connection with a proposed new municipal waterworks and sewage system, estimated to cost \$750,000.

The Davison Chemical Co., Garrett Building, Baltimore, is continuing its expansion in fertilizer plants and following the acquisition of three Southern fertilizer works, previously announced, has completed negotiations for the purchase of the plant and business of the Alliance Fertilizer Co., Alliance, Ohio. Extensions and improvements are planned.

The Crompton Co., Crompton, R. I., is considering the construction of a steam power plant at its proposed textile mill on site recently acquired at Waynesboro, Va. The entire project will cost in excess of \$100,000.

The Hackley Morrison Co., 1708 Lewis Street, Richmond, Va., machinery dealer, has inquiries out for a quantity of metal-working machinery, including pipe folder, tin pipe former, beading machine, turning machine, wiring machine and grooving machine, Peck, Stow & Wilcox Co., manufacture preferred; also for one 500-gal. per min. electrically-operated centrifugal fire pump, to operate at 100 lb. pressure; and one similar size unit, direct-connected to gasoline engine.

The Evans-Inman Lumber Co., G. H. Evans, president, Forty-third Street, Chattanooga, Tenn., recently organized

with a capital of \$200,000, has acquired about 10 acres at Hapeville, Ga., and plans the early construction of a new mill for the production of finished hardwood lumber, to cost in excess of \$75,000 with machinery.

The Yellow Cab Co., 1123 Cathedral Street, Baltimore, will remodel a four-story factory, 200 x 300 ft., on Preston Street, for a new service, repair and garage building, estimated to cost \$75,000. A complete machine repair department will be installed. Kubitz & Koenig, Emerson Tower Building, are architects and engineers. William W. Cloud is president.

The Baltimore & Ohio Railroad Co., B. & O. Building, Baltimore, is reported to have acquired property on the Little Calumet River in the southwestern section of Chicago, as a site for new construction and repair shops, and terminal yards. A shop group is projected for the manufacture of a new type of steel freight car. The entire project is expected to cost in excess of \$5,000,000.

The Armour Fertilizer Works, 111 West Jackson Boulevard, Chicago, has acquired the plant of the Fisheries Products Corporation, Money Point, Va., in receivership, for \$100,000. The new owner will continue production at the plant and is said to be contemplating improvements.

The Board of Education, Columbus, Ga., has completed plans for the construction of an addition to the Columbus industrial high school, to cost \$25,000.

The Wilson-Hock Co., Hopewell, Va., machinery dealer, has inquiries out for a baler for baling wood shavings; one 150 to 200-kva. engine-generator unit, direct-connected, 3-phase, 60-cycle, 550 volts; one triplex pumping unit, direct-connected to motor; two 150-hp. and two 100-hp. horizontal return tubular boilers, to operate at about 125 lb. working pressure; one 50-hp. stationary steam engine, to operate at 125 lb. working pressure, flywheel type, and air compressors suitable for a 25-ton capacity ice plant, steam or electric driven, Ingersoll-Rand type preferred.

The Empire Collieries Co., Pulaski, Va., has arranged an expansion program, including the construction of a new tippie to replace a unit destroyed by fire, breaker, washeries and general mining machinery. The company is affiliated with the Sterling-Midland Coal Co.

The plant of the United States Cast Iron Pipe & Foundry Co., in Kirkwood, a suburb of Atlanta, has been purchased by the Pullman Co., Chicago, and will be converted into a repair and remodeling shop to serve the Southeastern division of the company. The plant, which is located on a 27-acre tract adjoining the Georgia Railroad in Kirkwood, was for years the main works of the Pratt Engineering Co., but has been idle for a number of months since the United States Pipe Company suspended operations. The purchase price is understood to have been about \$250,000. In addition, the Pullman Co. expects to spend \$750,000 in new buildings and equipment, making a total investment of \$1,000,000. Between 800 and 1000 men will be employed.

The Alaska Railroad, Seward, Alaska, owned by the United States Government and operated by the Department of the Interior, Washington, plans to rebuild its power plant and locomotive house at Curry, Alaska, destroyed by fire July 19, with loss reported in excess of \$70,000 including equipment.

## Detroit

DETROIT, July 26.

WORK will begin on a one-story addition to the cold storage and refrigerating plant of the Michigan Artificial Ice Products Co., Ann Arbor, Mich., 30 x 90 ft., to cost about \$55,000 with equipment. Headquarters are at 1001 Real Estate Exchange Building, Detroit, George Levy, president.

The Packard Motor Car Co., East Grand Boulevard, Detroit, is taking bids on a general contract for its proposed three-story assembly plant, 60 x 265 ft., to cost in excess of \$250,000 with equipment. Albert Kahn, Marquette Building, is architect.

The Star Automobile Co., Saginaw, Mich., has begun the erection of a new building to cost about \$35,000.

The Richard Brothers Die Works, 1560 East Milwaukee Avenue, Detroit, will soon take bids for a new one-story plant at Hillsdale, Mich., 35 x 90 ft., to cost \$70,000 with equipment. J. Lawson Miller, Goebel Building, is architect. Otis and Clement C. Richard head the company.

The Electric Refrigeration Corporation, Detroit, has plans under advisement for a new unit on 38-acre tract, to cost in excess of \$650,000 with equipment. It is purposed to increase the present manufacturing facilities by more than 200 per cent during the next twelve months. Arnold H. Goss is president.

The Chevrolet Motor Co., General Motors Building, Detroit, has awarded a general contract to the W. E. Wood

Co., Ford Building, for a new plant unit in the vicinity of Euclid and Holdbrook Avenues, to be used as a gear and axle division. It is reported to cost in excess of \$250,000. Albert Kahn, Marquette Building, is architect.

The Board of Public Works, South Haven, Mich., is asking bids until Aug. 12, for equipment for the municipal waterworks, including four electrically-driven centrifugal pumps and two similar gasoline engine-operated units for standby service; one electrically-driven centrifugal wash water pump, vacuum pump, and auxiliary apparatus; also for a concrete standpipe, capacity, 1,500,000 gal.; filter equipment, pump room apparatus, etc. Pearce, Greeley & Hansen, 6 North Michigan Avenue, Chicago, are architects.

The American Blower Co., 6004 Russell Street, Detroit, manufacturer of mechanical draft apparatus, has awarded a general contract to the Walbridge-Aldinger Co., Penobscot Building, for a one-story addition, 142 x 164 ft., to cost in excess of \$90,000 with equipment. Smith, Hinchman & Grylls, Marquette Building, are architects.

The Dodge Brothers Motor Co., 7900 Joseph Campau Avenue, Hamtramck, Detroit, has filed plans for a one-story addition, 80 x 325 ft., to be equipped as a repair shop and for testing service, estimated to cost \$200,000 with machinery. Contract was awarded recently to the M. J. Hoffman Construction Co., Furniture Building, Evansville, Ind. F. J. Haynes is president.

The J. B. Ford Co., Wyandotte, Mich., manufacturer of metal cleaning compounds, has just completed the erection of a new factory and office building.

## Pacific Coast

SAN FRANCISCO, July 20.

WORK is under way on the proposed new car repair shops of the Pacific Fruit Express Co., 65 Market Street, San Francisco, a subsidiary of the Southern Pacific Co., at Roseville, Cal., to consist of 36 one-story structures, to cost approximately \$1,500,000 with equipment. The engineering department of the company is in charge.

The Crane Co., 750 Keller Street, Los Angeles, has plans for a steel frame crane runway at its local plant to cost about \$50,000.

The Molding Supply Co., 2351 Exposition Boulevard, Long Beach, Cal., is having plans drawn for a new one-story plant at Alhambra, Cal., 100 x 200 ft., to cost \$17,000 exclusive of equipment.

The Southern Pacific Co., Portland (Southern Pacific Railway), has completed plans for new shop and terminal buildings at Klamath Falls, Ore., estimated to cost \$325,000.

The Turlock Irrigation District, Turlock, Cal., has applied for permission to use waters from the Tuolumne River and Moccasin Creek, for a proposed hydroelectric generating plant with capacity of about 25,000 hp. It will be located in the vicinity of Jackson, Cal.

Ovens, power equipment, conveying and other machinery will be installed in the new two-story and basement plant, 100 x 150 ft., to be constructed at Glendale, Cal., by the Weber Baking Co., Slauson Avenue and San Pedro Street, Los Angeles, to cost about \$160,000. Gene Verge, Petroleum Security Building, Los Angeles, is architect.

Kenneth Macdonald, Brack-Shops Building, Los Angeles, architect, has plans for a thirteen-story automobile service, repair and garage building on Spring Street, to cost \$550,000 with equipment.

The Western Pacific Railroad, San Francisco, has tentative plans for a new fruit-car icing plant at its yards near K Street, Marysville, Cal., to cost about \$50,000 with equipment. Electric conveyors will be installed.

The Eastern Oregon Light & Power Co., Baker, Ore., has applied for permission to use waters from the Grande Ronde River for a proposed hydroelectric power development estimated to cost \$800,000. A transmission line will be constructed.

The Board of School Trustees, Auburn, Cal., will erect a group of vocational shops in connection with its proposed new high school, to cost \$265,000, for which bids are being asked on a general contract until Aug. 5. W. H. Weeks, 369 Pine Street, San Francisco, is architect.

The Western Iron & Metal Co., 2500 Santa Fe Avenue, Los Angeles, has awarded a general contract to Philip Friedman & Son, Fiftyeth Street and Pacific Boulevard, for a one-story addition, 88 x 225 ft.

E. H. Stanton, Opportunity, Wash., will rebuild his refrigerating and cold storage plant destroyed by fire July 14, with loss reported at close to \$100,000 including equipment.

## Cleveland

CLEVELAND, July 26.

MACHINE tool sales were light the past week, but a fair amount of inquiry came out, mostly for single machines. The White Motor Co., Cleveland, purchased eight or ten machines, mostly radial drills, which was the only lot of any size placed in this district during the week. The Oakland Motor Car Co., Pontiac, Mich., has purchased some gear grinding equipment for its new plant. Little business is coming at present from other automobile companies.

The National Carbon Co., Cleveland, contemplates the erection of several factory buildings in connection with its Fostoria, Ohio, plant. Plans are being prepared by Stone & Webster, Boston.

The Stardant Novelty Co., Kenmore, Ohio, is taking bids for a manufacturing plant.

The Wapakoneta Machine Co., Wapakoneta, Ohio, has prepared plans for an addition to cost \$25,000.

The Alliance Tank Co., Alliance, Ohio, has plans for a factory, 50 x 80 ft. E. L. Coble is president.

The Folberth Auto Specialty Co., 7920 Lake Avenue, Cleveland, manufacturer of automobile specialties, has placed contract for a one-story factory, 47 x 158 ft.

The city of Fremont, Ohio, contemplates the erection of a filtration plant. W. G. Clark, 1046 Spitzer Building, Toledo, is the architect.

The Etna Machine Co., Toledo, Ohio, has placed contract with the A. Bentley & Sons Co., Toledo, for a one-story addition, 91 x 103 ft.

## Canada

TORONTO, July 26.

MACHINE tool sales fell off somewhat the past week. Inquiries, however, are fairly active and some good business is in prospect on new works account. Few orders are appearing from the automotive industry. The approaching general election is having some effect on business as there is much uncertainty as to what action will be taken with regard to the tariff in the session following the election.

The Ice-O-Matic Refrigeration Co., recently formed to manufacture electric refrigerators, etc., is establishing a plant at Walkerville, Ont. Until this plant is in operation orders will be filled from the company's works in Michigan. W. F. Morgan-Dean and H. S. Pritchard are vice-presidents. Mr. Dean will be in charge of manufacturing and Mr. Pritchard will be general sales manager.

Fittinga, Ltd., Oshawa, Ont., manufacturer of pipe fittings, chain, etc., is building a \$50,000 addition to its plant which will give an additional 10,000 ft. of floor space. The installation of equipment will begin in about two weeks.

The Dominion Truck Equipment Co., Kitchener, Ont., will build an addition to its plant to cost \$15,000.

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Baron & Charron have the general contract for the erection of an addition to the plant of the Dominion Safety Lock & Nut Co., Granby, Que.

Davis & Dean, Queenston Street, St. Catharines, Ont., have been awarded contract for erection of paper mill at Thorold, Ont., for the Superior Paper Mills, Ltd.

The Tweed Trough Co., Tweed, Ont., has purchased a site adjacent to its property on which it will erect an addition.

The James Rodick Construction Co., Merger Building, St. Joseph Street, Quebec, has been awarded the general contract for the construction of a boiler and power house for the Hospital Hotel-Dieu du St. Sacrement, Quebec, to cost \$102,000.

The Canadian Sealright Co., the parent company of which is at Fulton, N. Y., will establish a plant at Peterboro, Ont., for the manufacture of bottle caps, liquid-tight paper cans, etc. The Canadian company has been formed with a capital stock of \$100,000. The officers include Winthrop L. Carter, Nashua, N. H., president; Eugene W. Skinner, Fulton, N. Y., vice-president, and Robert A. Brown, Peterboro, Ont., secretary-treasurer.

The factory of the Newcombe Piano Co., 121 Bellwoods Avenue, Toronto, was destroyed by fire July 18, with a loss to building and equipment of \$150,000.

## Foreign

THE Nippon Electric Co., Tokyo, Japan, manufacturer of electrical machinery, is beginning work on its expansion program with the erection of the first of four three and four-story plant units, for which a general contract recently was let to the H. K. Ferguson Co., Cleveland. The structures will cost close to \$2,000,000 with equipment. Later it is proposed to erect additional structures of like size to replace existing buildings.

Bids are being asked by the Bureau of Yards and Docks, Navy Department, Washington, until Aug. 11, for an ice-making and refrigerating plant, including building, at Coco Solo, Panama, specification 5186.

The Government of France, Paris, is arranging a program of public works expansion in Madagascar, including the electrification of the Tananarive-East Coast railroad line; construction of docks at the ports of Tamatave, Manakava and Majunga, with installation of cargo-handling machinery, conveying apparatus, etc., and the construction of a new railroad line from Flanarantsoa to the east coast. Information at the office of the Bureau of Foreign and Domestic Commerce, Washington, France No. 40546, and at the American Consulate, Paris, F. P. Waller, assistant trade commissioner.

The Silesian-American Corporation, recently organized as an affiliation of the Anaconda Copper Mining Co., 25 Broadway, New York, will take over the Silesian zinc mining and refining properties of the Georg von Giesche interests of Germany, including the Giesche Co. and George von Giesche Erben. The holdings include concentrating, smelting and refining plants, proved zinc ore reserves and deposits, landed estates of about 19,000 acres, 1400 homes for workingmen, etc. The new owner plans extensive development and production, with the installation of additional equipment and facilities. Cornelius F. Kelly, head of the Anaconda company, is also president of the new organization.

The Oberpfalz Electric Co., Berlin, Germany, an interest of the Allgemeine Gesellschaft (German General Electric Co.), is arranging for the sale of a bond issue of \$1,250,000 in the United States, the proceeds to be used for new construction and enlargement of plant, including considerable additional machinery. The issue will be handled by P. W. Chapman & Co., 46 Cedar Street, New York.

Negotiations are reported closed for the American Smelting & Refining Co. to take over the plants and mining properties of the Eagle-Picher Lead Co. The latter company owns extensive mines in the Joplin, Mo., district and at Picher, Okla. It has manufacturing plants in Cincinnati, East St. Louis, Chicago, Picher and Henryetta, Okla., Joplin, Mo., Galena, Kan., and Newark, N. J. The Eagle White Lead Co., established in 1883, took over the Picher Lead Co. in 1906. The present style of the company dates from 1916, when the two were merged. Reproduction value of refineries and plants is stated to be \$38,000,000. Capitalization includes \$855,500 in 6 per cent preferred stock and 1,000,000 shares of \$20 par common stock.

The Moore Drop Forging Co., Springfield, Mass., has available \$52,933 in its sinking fund for the purchase of Class A participating stock. Sealed offers will be received by the company until July 21. The current value of the stock in the open market is around \$63.50 a share.

## THE LAST WORD

(Contributed by the Reader Service Department of the Iron Age Publishing Co.)

The year—1903

The place—Detroit

The scene—The district sales office of a steel company

Act. 1. Young district sales manager is seated at his desk, apparently very busy. Telephone rings. The d.s.m. listens intently; says, "I'll be right over," grabs his derby and rushes out the door.

Act. 2. Scene changes to office of an automobile manufacturer. The salesman is shown a mass of blue prints, and is told, "We are planning to use 'sheet iron' in certain parts of our car for the coming year." (Note to reader: At that time automobile frames were made of wood, and fenders largely of patent leather.) It was suggested that the frames might be made of channels formed from sheets.



Act. 3. Full of hope, and alive to the possibilities of this new use for sheets, the youthful district manager at once communicates with his company.

Act. 4. (Three days later.) Postman delivers reply:

We have given due consideration to the proposition at Detroit, but in view of the risk to human life involved in travel by automobile, we prefer not to quote.

Curtain, with dim lights and soft, sad music.



Twenty-three years later. All the principals in this little drama have risen in the world. The young district sales manager is now vice-president of the Inland Steel Co., Chicago, and one of the best-known men in the sheet steel business. His name is Walter C. Carroll. The automobile manufacturer (then known as the Leland-Faulconer Co.) makes the Cadillac car.

But what of sheet steel itself? Its sales to the automotive industry in a single year now exceed its entire production for the year 1903.

"LESS aimless shouting of 'safety first' and more guards on dangerous machinery will cut the accident rate," the National Safety Council suggests. Apparently the metal trades are a leader in safeguarding operators of machinery, for an investigation by the Travelers Insurance Co. reveals that only 28 per cent of the injuries in this industry are the result of point-of-operation accidents.

The metal trades' percentage is lowest in a comparison of five of the leading industries.

SHADES of perfumed pig iron! Fumigated molding sand is with us. If you doubt it, read this letter from a Tullytown, Pa., sand company:

On account of Japanese Beetle Quarantine existing at Tullytown, no more sand can be shipped out of this area unless "fumigated under direction of United States Department of Agriculture. We can supply it without extra charge."

Slogan for enterprising foundry: "Our castings are guaranteed beetle-proof, made in fumigated molds."

A. H. D.

